



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

MAR 28 2000

REPLY TO THE ATTENTION OF

## MEMORANDUM

## DATE:

SUBJECT: ACTION MEMORANDUM - Determination of Threat to Public Health or the Environment at the Lindsay Light II Site/(RV3 North Columbus Drive), Chicago, Cook County, Illinois (Site Spill ID #YT)

FROM: Verneta Simon and Fred Micke, On-Scene Coordinators *Verneta Simon*  
Emergency and Enforcement Response Branch - Section III

TO: William E. Muno, Director  
Superfund Division

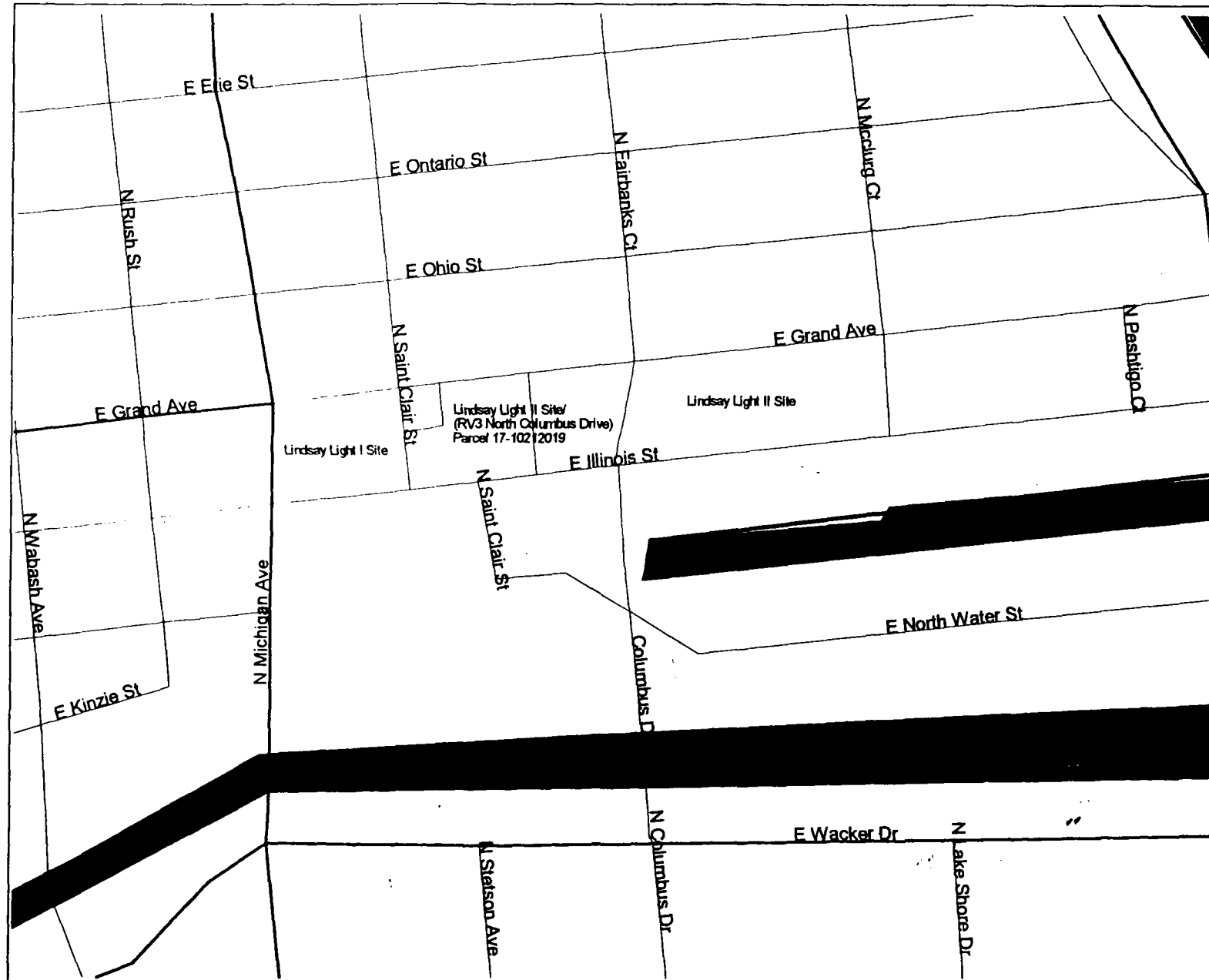
## I. PURPOSE

The purpose of this Memorandum is to document the determination of an imminent and substantial threat to public health and the environment posed by presence of radioactive thorium that was detected during a U.S. EPA walkover radiation survey of the property on North Columbus Drive directly across the street from the Lindsay Light II Removal Site. The owner and developer of the North Columbus Drive property, Grand Pier Center L.L.C. (Grand Pier), further documented the presence of thorium through sampling. These levels were cross-checked by Argonne National Laboratory, which found the total radium concentration to be as high as 244 times the clean-up criterion for the Lindsay Light II Site. As a result of the Grand Pier sample results, U.S. EPA expanded the Lindsay Light II Site to include Grand Pier's property. The Grand Pier development is a future mixed-use building located in the 200 East Block of Illinois Street in Chicago, Illinois and bears the Cook Count Assessor's parcel # 17-10212019. U.S. EPA designated the Grand Pier parcel as Lindsay Light II Site, RV3 North Columbus Drive. A map showing this parcel is available on the next page. These boundaries are North Columbus Drive, East Illinois Street, North St. Clair Street, and East Grand Avenue. Please note buildings on the Northwest corner of the Grand Avenue are not part of parcel #17-10212019.

The Chicago Dock and Canal Trust, the owner of the Lindsay Light II Site at 316 East Illinois Street, conducted an initial removal action at the Site pursuant to an Administrative Order by Consent (AOC) dated January 27, 1994, (please see confidential enforcement addendum).



# Lindsay Light Site Map



On June 6, 1996, U.S. EPA issued a Unilateral Administrative Order (UAO) to the Chicago Dock and Canal Trust and Kerr-McGee Chemical Corporation to conduct the removal of the radioactive soils identified by the 1994 AOC at 316 East Illinois. The UAO also required that the Respondents:

"Conduct off-site surveying and sampling as necessary and, at a minimum, implement the standards of 40 Code of Federal Regulations ("CFR") 192, if deemed necessary should contamination be discovered beyond current site boundaries."

This site is not on the National Priorities List (NPL).

## II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID # ILD 0000002212

Please refer to the previous Action Memoranda and Amendment dated July 11, 1994, October 5, 1995, April 22, 1996, and September 22, 1999, for a description of site conditions and background. The September 22, 1999 Action Memorandum Amendment determined that institutional controls were adequate to protect human health and the environment. The specific institutional control approved by the Action Memorandum Amendment was a Right-of-Way Agreement entered among Kerr-McGee Chemical L.L.C., River East L.L.C. (successor to Chicago Dock and Canal Trust), and the City of Chicago.

The Right-of-Way Agreement restricts access to subsurface soils below the streets and sidewalks surrounding the Lindsay Light II Site. The Right-of-Way Agreement requires the City to give U.S. EPA notice of any permit application to conduct work in the subsurface soils and requires all permit applicants to implement a health and safety plan that includes radiological surveillance. A copy of this agreement is provided in Attachment 1. On at least two occasions since the approval of the Right-of-Way Agreement, however, the parties utterly failed to comply with it.

The first reported breach of the Right-of-Way Agreement occurred in January or February 2000 and involved the City of Chicago's removal of two hydrants from the Illinois Street right-of-way without notifying U.S. EPA. The second incident occurred in late January and early February 2000 and involved the Lindsay Light II owner and developer, River East. River East apparently obtained City permits and began to install a block-long sewer along Illinois Street from Columbus Drive to McClurg Court. Neither the City nor River East notified U.S. EPA of any permit applications or excavation work in the Illinois Street Right-of-Way. Neither party implemented an approved health and safety plan nor conducted requisite radiological surveillance. After radiation surveillance was instituted at River East's Illinois Street sewer project, four areas of elevated levels of radiation were discovered. U.S. EPA also surveyed offsite landfills that received material from the sewer excavation. One landfill potentially received radioactive material.

On February 29, 2000, U.S. EPA discovered elevated levels of radioactive materials at the Grand Pier development directly across Columbus Drive from the existing Lindsay Light II site. Since the discovery of the new contamination, U.S. EPA has worked with Grand Pier, Kerr-McGee Chemical, and River East to implement the requirements of the existing Lindsay Light UAO at the Grand Pier property and at the six offsite landfills that accepted potentially radioactive materials from the Grand Pier property. Work will proceed under the existing UAO until U.S. EPA issues an Amended UAO.

U.S. EPA performed an environmental justice (EJ) analysis for this site that is contained in Attachment 6. In Illinois, the low-income percentage is 27% and the minority percentage is 25. To meet EJ concern criteria, the area within 1 mile of this property must have a population that's twice the state low income percentage or/and twice that state minority percentage. That is, the area must be at least 54% low-income and/or 50% minority. At this site, the low-income percentage is 10.05 % and minority percentage is 19.64%, as determined by Arcview. Therefore, this site does not meet the region's EJ criteria based on the demographics as identified in "Region 5 Interim Guidelines for Identifying and Addressing a Potential EJ Case, June 1998.

### **III. THREAT TO PUBLIC HEALTH OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES**

Conditions at the RV3 North Columbus Drive portion of Lindsay Light II Site may pose an imminent and substantial endangerment to public health or welfare or the environment, based upon factors set forth in the National Contingency Plan (NCP), 40 CFR 300.415 (b)(2). These factors include:

a) actual or potential exposure to nearby populations, animals, or the food chain from hazardous substances or pollutants or contaminants:

This factor is present at the site due to the presence of elevated gamma ray readings that were documented on February 29, 2000 to be as high as 1,000,000 counts per minute (cpm). In an uncontaminated area of the site the count rate was about 7,000 cpm. The clean-up criterion for the Lindsay Light II Site is 7.1 picoCuries per gram (pCi/g) which equates to 19,726 cpm. The highest gamma exposure rate reading measured at the Lindsay Light II Site/RV3 North Columbus Drive was approximately 1,300 microRoentgen per hour ( $\mu$ R/hr). The background level for this site was approximately 8  $\mu$ R/hr.

b) high levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate:

On or about March 1, 2000, Grand Pier collected soil samples. The highest sample result from the Grand Pier samples, as of the preparation of this Action Memorandum, was 1,732 pCi/g

for total radium (Ra-226 +, Ra-228)<sup>1</sup>. The Lindsay Light II Site clean-up level is 7.1 pCi/g total radium, including total radium background of 2.1 pCi/g.

The sample analyses showed that the radioactive component was thorium. Thorium is a chain of 11 radionuclides beginning with thorium-232 and ending with non-radioactive lead 208. This chain emits gamma rays, X-rays, alpha particles and beta particles. Gamma rays and X-rays are penetrating photons that are an external exposure hazard. Photons can penetrate the skin and expose interior organs. Alpha particles are helium nuclei that are an ingestion and inhalation hazard. Beta particles are electrons that are principally an ingestion and inhalation hazard, but in high concentrations, might be a skin hazard.

c) other situations or factors which may pose threats to public health or welfare or the environment:

Given that U.S. EPA and the Respondents detected contamination at the RV 3 North Columbus portion of the Lindsay Light II Site, and in streets adjacent to the Lindsay Light II Site, there is reason to suspect additional contamination may exist on properties surrounding the site. The boundaries of the contamination will be determined, so if necessary, additional institutional controls may be implemented. To determine the extent of contamination in this geographical area, U.S. EPA will perform the extent of contamination study.

In addition to the Lindsay Light II Site, the Lindsay Light Company occupied another building, one block West of Grand Pier, at 161 East Grand Avenue known as the Lindsay Light I site. On June 30, 1993, U.S. EPA placed twelve thermoluminescent dosimeter (TLD) badges in the building at 161 East Grand Avenue to monitor radiation levels in work spaces and removed them after a month. TLD results were as follows:

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1

The cleanup criterion is keyed to total radium, the sum of radium-226 and radium-228, because, together, they are the dominant sources of health risk in the waste materials. Radium-226 is part of the Uranium Decay Series while Radium-228 is part of the Thorium Decay Series. Both series are sequences containing several radionuclides and both series are found in the ores used to obtain gas mantle materials. The ores used by Lindsay Light had a much higher thorium series content. The cleanup criterion is based upon the assumption that removing wastes to low levels for the radiums will assure that the risks from other radionuclides are even lower.

	TLD #	millirem per hour	millirem per year
	9021	4.29	8,579
	9022	0.27	535
	9023	0.028	56
	9024	0.033	67
	9025	0.037	75
	9026	0.26	514
	9027	0.63	1257
	9028	0.052	104
	9029	0.039	78
<b>Background</b>	<b>9031</b>	<b>0.0046</b>	<b>9</b>
	9032	0.0062	12
	9033	0.031	62

These work space results were compared to background and to the Nuclear Regulatory Commission (NRC) regulations in the new Title 10, Part 20.1301, Code of Federal Regulations of 100 millirem per year and 2 millirem per hour for individual members of the general public. These TLD results exceeded relevant NRC levels in five locations.

The above technical information was provided in writing to the Building Manager with the following text:

In the opinion of U.S. EPA's Regional Radiation Expert and Superfund Toxicologist, there are at least five locations inside 161 East Grand that present a threat to persons working. Since this contamination is limited to the indoors, it can not be remediated under U.S. EPA's Superfund program. The Superfund law usually applies to releases of hazardous substances into the outdoors environment. We do think it would be prudent to decontaminate and whenever possible reduce exposure by limiting exposure times, increasing the distance between work sites and exposure points, and using furniture or other items as absorbers. Also, the Agency for Toxic Substances and Disease Registry (ATSDR) recommended vacating and sealing the President's office on the second floor or remediating it to a radiologically safe level. We would like to reiterate that the janitor's supplies should remain away from the chimney.

U.S. EPA is still willing to advise, review any cleanup plans and survey remediated areas at no charge, if you decide it is prudent to take any action.

To date, U.S. EPA is not aware of any additional remediation performed since the above information was provided in 1993.

#### **IV. ENDANGERMENT DETERMINATION**

Given the nature of the Site, the nature of the contaminants - radioactive materials that cause external exposure, inhalation, ingestion, and direct contact hazards, as described in Sections II and III, the actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action described in this Action Memorandum, may pose an imminent and substantial endangerment to public health, or welfare, or the environment due to these radioactive materials.

#### **V. PROPOSED ACTIONS AND ESTIMATED COSTS**

Pursuant to the UAO, the Potentially Responsible Party (PRP) will fully remediate the site until maximum protectiveness of the human health and the environment is achieved. This will involve at a minimum the following actions:

- 1) Develop a Work Plan for the radiological assessment of the site.
- 2) Develop and implement a site health and safety plan.
- 3) Develop and implement an air monitoring plan.
- 4) Develop and implement site security measures.
- 5) Conduct land surveying to the extent necessary to establish a grid system to locate all property boundaries, special features (pipes, storage tanks, etc.), and sample locations.
- 6) Place borings in critical locations (grid corners, high exposure rate areas, special features, etc.) for the purpose of measuring subsurface radiation levels. Measurements shall be recorded at each 6 inch depth until the natural soils are reached or radiation levels reach background, whichever is the greatest depth.
- 7) Collect soil samples from the borings and analyze for radionuclide content and RCRA characteristics. These results will then be used by the PRP to correlate subsurface radiation levels and radionuclide content, and to determine the disposal facility.
- 8) Conduct off-site radiological surveying and sampling as necessary and, at a minimum implement 40 CFR 192 if deemed necessary should contamination be discovered beyond current site boundaries.
- 9) Based upon soil results, remove, transport and dispose of all characterized or identified hazardous substances, pollutants, wastes or contaminants at a RCRA/CERCLA approved disposal facility in accordance with the U.S. EPA off-site rule.

10) The soil clean-up criterion is 7.1 picoCuries per gram (pCi/g) total radium (Ra-226 + Ra-228) including background, unless analyses indicate the existence of additional contaminants, hazardous substances, pollutants or waste.

The OSC has begun planning for the provision of post-removal site control, consistent with the provisions of Section 300.415(k) of the NCP. However, the nature of future response actions should eliminate all exposure threats, which should minimize the need for post-removal site control.

The response actions described in this memorandum directly address actual or threatened releases of hazardous substances, pollutants or contaminants at the facility which may pose an imminent and substantial endangerment to public health and safety, and to the environment. These response actions do not impose a burden on the affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

#### Applicable or Relevant and Appropriate Requirements (ARARS)

All applicable or relevant and appropriate requirements (ARARS) of Federal law will be complied with to the extent practicable.

The primary federal ARAR for soil cleanup criteria is Title 40, Part 192 of the Code of Federal Regulations, "Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings." Ancillary ARARs include the NRC's Title 10, Part 20, of the Code of Federal Regulations, "Standards for Protection Against Radiation," NRC Regulatory Guide 1.86, "Termination of Operating License for Nuclear Reactors," and the Department of Transportation's Title 49 for shipping hazardous materials. Also many of the regulations carried out by the NRC have been delegated to the Illinois Department of Nuclear Safety (IDNS).

The IDNS has determined that the thorium is Section 11(e) (2) material, 42 U. S. C. 2014(e) from the thorium process carried out by Lindsay Light and Chemical Corporation. In accordance with the revised NCP, the IDNS has identified State ARARS which are listed in Document No. 3 in the Lindsay Light II Administrative Record update No. 4.

#### **VI. CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED**

Delayed or non-action may result in increased likelihood of external exposure, inhalation, ingestion or direct contact to human populations accessing and working on the site. Also, since there is no threshold for radiological risk, additional exposure to radiological materials will increase the cancer risk.

In addition, radiological surveys of the landfill where excavated spoils were disposed of prior to February 29, 2000, appear to indicate that thorium residuals may have been taken from the Grand Pier property to at least one landfill.



**VII. OUTSTANDING POLICY ISSUES**

None.

**VIII. ENFORCEMENT**

For administrative purposes, information concerning confidential enforcement strategy for this site is contained in the Enforcement Confidential Addendum.

**IX. RECOMMENDATION**

This decision document represents the selected removal action for the Lindsay Light II Site/(RV3 North Columbus Drive), in Chicago, Illinois, developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based upon the Administrative Record for this site. Conditions at the site meet the NCP Section 300.415(b)(2) criteria for a removal action.

APPROVE:

 3/28/99  
DIRECTOR, SUPERFUND DIVISION

DISAPPROVE:

\_\_\_\_\_  
DIRECTOR, SUPERFUND DIVISION

Attachments: Enforcement Confidential Addendum

1. Right-of-Way Agreement
2. Action Memorandum Amendment dated September 22, 1999
3. Action Memorandum dated April 22, 1996
4. Action Memorandum dated October 5, 1995
5. Action Memorandum dated July 11, 1994
6. Environmental Justice Analysis
7. Index to the Administrative Record

**cc: Kevin Mould, U.S. EPA, OERR, 5202-G**

**Michael Chezik, U.S. Department of Interior**

**Tom Skinner, Director, Illinois Environmental Protection Agency, w/o enforcement  
addendum**

**Steve Davis, Illinois Department of Natural Resources, w/o enforcement addendum**

**Thomas W. Ortiger, Illinois Department of Nuclear Safety, w/o enforcement addendum**

**William F. Abolt, Commissioner Department of Environment City of Chicago, w/a  
enforcement addendum**

**LINDSAY LIGHT II SITE  
Chicago, Illinois  
Administrative Record - Update #7**

**BCC Page  
1 - Page**

**REDACTED**

**NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION**

**LINDSAY LIGHT II SITE  
Chicago, Illinois  
Administrative Record - Update #7**

**ENFORCEMENT CONFIDENTIAL ADDENDUM  
3 - Pages**

**REDACTED**

**NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION**

# ATTACHMENT - 1

**No P.I.N. applicable**  
**Document affects public way.**

## RIGHT-OF-WAY AGREEMENT

This Right-of-Way Agreement ("Agreement") is entered into this 27th day of Sept., 1999 by and among River East, L.L.C. ("River East") and Kerr-McGee Chemical L.L.C. ("Kerr-McGee"), together referred to herein as the Obligors ("Obligors"), and the City of Chicago ("City"), as follows:

1. This Agreement is not binding on the City until it is executed by a duly authorized representative of the City. Prior to execution, this Agreement constitutes an offer by the Obligors. The duly authorized representatives of the Obligors have signed this Agreement, and this Agreement is binding upon them and their successors by merger or reorganization, upon execution by the City.
2. The Obligors stipulate:
  - a. The Site is located at 316 E. Illinois Street, Chicago, Illinois ("the Site"). The Site is and has been for multiple decades, used as an asphalt-paved parking lot. The Site is bounded by Grand Avenue, McClurg Court, Illinois Street and Columbus Drive.
  - b. On June 3, 1993, the United States Environmental Protection Agency ("USEPA") and the Illinois Department of Nuclear Safety ("IDNS") conducted a joint investigation at the Site and verified the presence of radioactivity below the asphalt surface of the Site at levels above natural background. USEPA determined that the use of the Site as a parking lot posed a negligible risk to the public.
  - c. A historical search determined that in the 1920s and 1930s a company known as the Lindsay Light Company leased the Site for the processing of thorium ores. Lindsay Light is a predecessor of Kerr-McGee. An ingredient in gas mantel manufacturing is thorium extracted from sand and formed into a solution into which mantels were dipped during the manufacturing process. It is believed that Section 11(e) (2) material, 42 U.S.C. §2014(e)(2) from this processing process is found at and around the Site ("Thorium Residuals").
  - d. On January 27, 1994, the Chicago Dock & Canal Trust ("Chicago Dock") (a predecessor to River East), entered into an Administrative Order by Consent ("AOC") with USEPA to investigate and study the extent of Thorium Residuals at

the Site. The study was completed in May, 1994. A final report concerning the extent of contamination was delivered to USEPA on October 17, 1995, and the study was approved by USEPA on March 13, 1996. The final report concluded, inter alia, that there were twelve subsurface areas at the Site which exhibited elevated gamma radiation levels. The AOC is Attachment B.

- e. On June 6, 1996, the USEPA issued a Unilateral Administrative Order ("UAO") to Chicago Dock and Kerr-McGee directing that a removal action be conducted at the Site pursuant to Section 106(a) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended ("CERCLA"), 42 U.S.C. §9606(a). The UAO established criteria (the "Cleanup Criteria") for Thorium Residuals of 7.1 picoCuries per gram total radium – 5 picoCuries per gram total radium above background. The UAO is attached as Attachment C.
  - f. Pursuant to the UAO and with approval of USEPA, Chicago Dock and Kerr-McGee conducted and completed a removal action at the Site. This remediation took several months during CY1996 and 1997 and involved the removal and disposal of soils from the Site.
  - g. During the removal action, testing along Illinois Street and Columbus Drive revealed deposits of Thorium Residuals which could not be readily excavated. Information regarding the known location of this contamination was provided to the City during a meeting on June 26, 1997, and in subsequent correspondence dated July 14, 1997. Attachment D depicts the portions of Grand Avenue, Illinois Street, McClurg Court and Columbus Drive rights-of-way adjacent to the Site that are the subject of this Agreement ("designated rights-of-way"). The impacted areas of the designated rights-of-way adjacent to the Site where Thorium Residuals are known to be located ("impacted rights-of-way") are described on Attachment E. If subsequent sampling and analysis indicates the presence of contaminants associated with Thorium Residuals beneath the designated rights-of-way, then those areas shall be subject to and covered by this Agreement.
  - h. Attached as Attachment E is a site map showing the known areas of Thorium Residuals in the impacted rights-of-way, and the relative concentration of the Thorium Residuals governed by the UAO.
3. The City stipulates that it holds the designated rights-of-way adjacent to the Site in trust for the public and has jurisdiction over the designated rights-of-way.
4. The parties stipulate that:
- a. This Agreement is intended to meet the requirements of the United States Environmental Protection Agency regarding Thorium Residuals.
  - b. This Agreement shall run with the land constituting the designated rights-of-way and shall be recorded by the Obligor at their expense with the Cook County

Recorder of Deeds on the property described in Attachment D (the designated rights-of-way). Within thirty (30) days of such recording with the Cook County Recorder of Deeds, the Obligors shall provide the City a copy of the Agreement that has been stamped by the Cook County Recorder of Deeds to indicate that it has been recorded with that office. No filing or notice will be referenced against the Site.

- c. This Agreement shall be null and void should the United States Environmental Protection Agency not approve it.
5. The City agrees that it will limit access to soil as described herein under portions of the impacted rights-of way described in Attachment E and in any supplemental exhibits as provided in ¶2(g) that exceed USEPA Cleanup Criteria, as provided in Code Section 10-20-100, et.seq. subject to the following conditions:
- a. Where the pavement and sidewalk in the impacted rights-of-way are to be considered engineered barriers to gamma radiation emanating from Thorium Residuals, the Obligors agree to reimburse the City for maintenance activities requested by the Obligors. The City does not agree to maintain the designated rights-of-way, nor does it guarantee that the designated rights-of-way will continue as a roadway or sidewalk, or that the impacted rights-of-way will always be maintained as an engineered barrier.
  - b. This Agreement does not in any way limit the City's authority to construct, reconstruct, repair or maintain and operate the designated rights-of-way upon the property or other portions of the designated rights-of-way subsequently identified as containing contaminants associated with Thorium Residuals, or to allow others to use the designated rights-of-way. To that extent, the City reserves the right to identify, investigate, and remove soil contaminated with Thorium Residuals above the Cleanup Criteria from the impacted rights-of-way or from other portions of the designated rights-of-way adjacent to the Site subsequently identified as containing contaminants associated with Thorium Residuals and to dispose of them in accordance with applicable environmental regulations so as to avoid causing a further release of the contaminants and to protect human health and the environment. The Obligors shall reimburse the reasonable actual costs incurred by the City or its contractors or agents in so identifying, investigating, removing, storing, handling or disposing of soil contaminated with Thorium Residuals above the Cleanup Criteria, and it shall not be a defense for the Obligors that those costs were not consistent with or required by United States Environmental Protection Agency regulations, guidelines or policies. Prior to incurring any such costs, the City shall first give the Obligors thirty days notice, unless there is an urgent reason otherwise, to remove or dispose of soil contaminated with Thorium Residuals above the Cleanup Criteria to the extent necessary for the City's work. The City will cooperate with the Obligors in the conduct of the work including providing reasonable and appropriate access. USEPA shall also be forwarded a copy of this notice. Failure to give this

opportunity to the Obligors shall not be a defense to a claim for reimbursement or that the work should not have been done. If no such notice and opportunity are provided by the City to the Obligors and there was no urgent reason otherwise, the City's claim for reimbursement against the Obligors for such costs shall not exceed \$10,000.00. For the purpose of this Agreement only, there is a rebuttable presumption that Thorium Residuals found in the portions of the impacted rights-of-way or in other portions of the designated rights-of-way subsequently identified as containing contaminants associated with Thorium Residuals arose from the release of Thorium Residuals from the Site. Should the Obligors not reimburse the costs identified here, this Agreement shall be null and void in addition to such other remedies as may be available to the City.

6. The Obligors agree to indemnify and hold harmless the City, its agents and employees, and contractors, for all obligations asserted against or costs incurred by them associated with the release of contaminants associated with Thorium Residuals in the impacted rights-of-way or in other portions of the designated rights-of-way subsequently identified as containing Thorium Residuals.
7. Violation of the terms of this Agreement by the Obligors, or their successor(s) in interest, may be grounds for voidance of this Agreement.
8. No violation of a permit by a third party shall constitute a breach of this Agreement by the City. The Obligors also agree that their personnel, if any, at the Site will exercise due diligence in notifying those accessing contaminated soil in the impacted rights-of-way of their rights and responsibilities under this Agreement.
9. Should the City breach this Agreement, the Obligors' sole remedy is for an action for damages in the Circuit Court of Cook County. Any and all claims for damages against the City, its agents, contractors, employees or its successors in interest arising at any time are limited to an aggregate maximum of \$20,000.00. No other breach by the City, its agents, contractors, employees or its successors in interest of a provision of this Agreement is actionable in either law or equity by the Obligors against the City or them and the Obligors hereby release the City, its agents, contractors, employees and its successors in interest for any cause of action it may have against them, other than as allowed in this paragraph, arising under this Agreement or environmental laws, regulations or common law governing contaminated soil in the designated rights-of-way. Should the City convey, vacate or transfer jurisdiction of the designated rights-of-way, the Obligors may pursue an action under this Agreement, not limited in amount, against the successors in interest, other than the City, or any of its departments, or State agency, in a Court of Law.
10. The City will limit access to the rights-of-way as follows:
  - a. Normal Access: The City will limit access to designated rights-of-way via the City Department of Transportation ("CDOT"), or its successor entity. Pursuant to §§10-20-100 and 10-20-150 of the Municipal Code of Chicago, a permit must be



issued by CDOT to any party, including the City, requesting to perform subsurface work in a City right-of-way. CDOT maintains and will maintain a permit database which, in conjunction with the City Department of Environment ("DOE"), tracks City rights-of-way with reported subsurface contamination. CDOT will consult the database whenever a party requests such a permit. The CDOT permit database will indicate the reported contamination under the impacted rights-of-way and it will indicate that radiation surveillance must be performed before and during excavations performed on other impacted rights-of-way subsequently identified as containing contaminants associated with Thorium Residuals through sampling and analysis. The permit database will also indicate that radiation surveillance must be performed during excavation or other work that disturbs or exposes the soil beneath the designated right-of-way. The CDOT database will direct the permit applicant to DOE to obtain detailed information on the nature and extent of the contamination and of the radiation surveillance requirements for any excavation near other impacted rights-of-way subsequently identified as containing contaminants associated with Thorium Residuals. After the permit applicant consults with DOE, the applicant must complete a form where the applicant acknowledges that it is aware of the contamination, will take appropriate steps to ensure the health and safety of people working in the impacted rights-of-way, and agrees to follow the health and safety plan for Thorium Residuals for these rights-of-way ("Health and Safety Plan"), attached as Attachment F, or other plan reviewed by USEPA that provides equal or greater health and safety protections, and to dispose of Thorium Residuals as required by law. DOE will provide written notice to River East, Kerr-McGee and USEPA at the time permit applicants contact DOE about the designated rights-of-ways and the radiation surveillance requirements.

- b. **Emergency Access:** The City Board of Underground ("BOU"), the City Department of Buildings, and the Chicago Fire Department, or their successor entities, will be notified of the contamination at the impacted rights-of-way and will be forwarded copies of all available environmental data regarding the impacted rights-of-way, including the Health and Safety Plan. BOU will provide this information to all utilities in the area. In the event of an emergency that occurs outside of CDOT business hours, this will enable utilities to provide their personnel with the appropriate information to ensure that proper health and safety precautions are taken.
11. The City will place and maintain placards in any underground access in the rights-of-way that state "Before Work, Contact Chicago Department of Transportation."

12. Notice for purposes of this Agreement should go to the following:

City of Chicago:  
Commissioner  
Department of Environment  
30 N. LaSalle Street  
25<sup>th</sup> Floor  
Chicago, IL 60602  
312/744-7606

River East LLC  
contact Kevin Augustyn  
Randy Grueb  
Charles Langenfeld  
455 East Illinois  
Suite 565  
Chicago, IL 60611  
Telephone: 312/321-8900  
Facsimile: 312/755-2750

and:

Vincent S. Oleszkiewicz  
counsel for River East LLC/MCL Companies  
Baker & McKenzie  
130 East Randolph Drive  
Chicago, IL 60601  
Telephone: 312/861-3737  
Facsimile: 312/861-2899

Kerr-McGee  
contact: Dan White  
Kerr-McGee Center  
Oklahoma City, OK 73125  
Telephone: 405/270-3792  
Facsimile: 405/270-3787

and:

Richard Meserve  
counsel for Kerr-McGee  
Covington & Burling  
1201 Pennsylvania Ave., N.W.

Washington, D.C. 20044  
Telephone: 202/662-5304  
Facsimile: 202/662-6291

U.S. EPA Region 5  
Lindsay Light II Site, Office of Regional Counsel  
contact: Mary Fulghum  
77 West Jackson Boulevard  
Chicago, IL 60604-3590  
Telephone: 312/886-4683  
Facsimile: 312/886-0747

13. Obligors, and any of their successor(s) by merger or reorganization pursuant to paragraph 1 of this Agreement, shall, at least 15 days prior to such subsequent merger or reorganization, give written notice and a copy of this Agreement to subsequent successor entity(ies), and provide written notice thereof to the City. The notice to the City shall include the name and address of the successor entity(ies).
14. If any provision of this Agreement is determined to exceed the authority of the City, or if any provision of this Agreement is declared null and void or unenforceable by any court or tribunal having jurisdiction, then this Agreement shall be null and void. If this Agreement is declared null and void, the information about the contamination will remain in the CDOT database and all permit applicants will be required to consult with DOE as described above. Similarly, the Emergency Access procedures described above will remain in force if the Agreement is declared null and void.
15. This Agreement shall continue in effect from the date of the Agreement until the Thorium Residuals in the soil are subsequently reduced through active remediation to levels approved by USEPA, such that unrestricted access to the impacted rights-of-way or other portions of the designated rights-of-way subsequently identified as containing contaminants associated with Thorium Residuals is demonstrated to be appropriate and there is no longer a need for this Agreement, and USEPA has, upon written request to the USEPA and notice to the City, provided a written determination authorizing unencumbered access to the impacted rights-of way.
16. Nothing in this Agreement shall be deemed to create any right or obligation in any person not a party hereto and this Agreement shall not be construed in any respect to be a contract in whole or in part for the benefit of any third party nor an admission of any fact, condition or obligation by or for the benefit of any third party, nor shall any statement herein be considered an admission of fact for any purpose or use outside this Agreement. Nothing in this Agreement shall preclude the City, Kerr-McGee or River East from petitioning U.S. EPA for a relaxation of the Cleanup Criteria, if circumstances so warrant.

IN WITNESS WHEREOF, the City of Chicago caused this Agreement to be signed by its duly authorized representative:

BY: \_\_\_\_\_  
Commissioner  
Department of Environment  
City of Chicago


Date: \_\_\_\_\_

IN WITNESS WHEREOF, River East, L.L.C. has caused this Agreement to be signed by its duly authorized representative:

River East, L.L.C.  
By: River East, L.L.C.  
Its: Sole Member  
By: River East, L.L.C.  
Its: Manager

By: \_\_\_\_\_  
Its: \_\_\_\_\_

IN WITNESS WHEREOF, Kerr McGee Chemical L.L.C. has caused this Agreement to be signed by its duly authorized representative:

BY:   
George D. Christiansen  
Vice President

Date: 09/24/99

IN WITNESS WHEREOF, the City of Chicago caused this Agreement to be signed by its duly authorized representative:

BY: \_\_\_\_\_  
Commissioner  
Department of Environment  
City of Chicago

Date: \_\_\_\_\_

IN WITNESS WHEREOF, River East, L.L.C. has caused this Agreement to be signed by its duly authorized representative:


River East, L.L.C.

By: River East, L.L.C.

Its: Sole Member

By: River East, L.L.C.

Its: Manager

By:   
Its: Manager

9/27/99

IN WITNESS WHEREOF, Kerr McGee Chemical L.L.C. has caused this Agreement to be signed by its duly authorized representative:

BY: \_\_\_\_\_

Date: \_\_\_\_\_

IN WITNESS WHEREOF, the City of Chicago caused this Agreement to be signed by its duly authorized representative:

BY:   
Commissioner  
Department of Environment  
City of Chicago

Date: 9/24/99

IN WITNESS WHEREOF, River East, L.L.C. has caused this Agreement to be signed by its duly authorized representative:

River East, L.L.C.  
By: River East, L.L.C.  
Its: Sole Member  
By: River East, L.L.C.  
Its: Manager

By: \_\_\_\_\_  
Its: \_\_\_\_\_

IN WITNESS WHEREOF, Kerr McGee Chemical L.L.C. has caused this Agreement to be signed by its duly authorized representative:

BY: \_\_\_\_\_

Date: \_\_\_\_\_

# ATTACHMENT - 2



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

SEP 22 1999

REPLY TO THE ATTENTION OF

SE-5J

## MEMORANDUM

DATE:

SUBJECT: ACTION MEMORANDUM AMENDMENT - DETERMINATION THAT  
SPECIFIC INSTITUTIONAL CONTROLS ARE ADEQUATE TO ABATE  
THE THREAT TO PUBLIC HEALTH AND THE ENVIRONMENT FROM  
THE THORIUM UNDER THE RIGHTS-OF-WAY ADJACENT TO THE  
LINDSAY LIGHT II SITE CHICAGO, COOK COUNTY, ILLINOIS  
(SITE SPILL ID #YT)

FROM: Verneta J. Simon, On-Scene Coordinator  
Fredrick A. Micke, On-Scene Coordinator *Fredrick A. Micke*  
Emergency Response Branch - Section III

TO: William E. Muno, Director  
Superfund Division

THRU: Richard Karl, Chief  
Emergency Response Branch

### I. PURPOSE

The purpose of this Action Memorandum Amendment is to document the determination that specific institutional controls are adequate to protect human health and the environment with respect to thorium present under the public rights-of-way adjacent to the Lindsay Light II Site. In an Action Memorandum dated April 22, 1996, which determinations are fully incorporated into this Action Memorandum Amendment by reference, U.S. EPA documented its determination that an imminent and substantial threat to human health and the environment existed at the Lindsay Light II Site due to the presence of thorium and also proposed necessary actions to abate that threat. The April 1996 Action Memorandum proposed a necessary removal action in section V., paragraph 6 to:

"[c]onduct off-site surveying and sampling as necessary and, at a minimum, implement 40 C.F.R. 192, if deemed necessary, should contamination be discovered beyond the site boundaries."

This Amended Action Memorandum documents the conduct of surveying and sampling adjacent to the Site and proposes specific institutional controls that should abate any remaining exposure threat associated with the thorium located under the City of Chicago rights-of-way adjacent to the Site. These specific institutional controls will eliminate the need to implement 40 C.F.R. 192 (i.e. the removal of contaminated soil to a cleanup level of 5 picocuries per gram total radium (radium-226 + radium-228) over background) with respect to the off-site thorium located under the adjacent rights-of-way. The institutional controls restrict access to the thorium underlying the rights-of-way and provide for the protection of human health and the environment through proper management of the thorium consistent with applicable and relevant and appropriate environmental regulations, if any person operates under the affected rights-of-way.

This site is not on the National Priorities List (NPL), has not been ranked, does not set any precedents, and is not nationally significant.

## II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID # ILD0000002212

The Lindsay Light II Site is a three-acre site located at 316 East Illinois Street, Chicago, Cook County Illinois. The Site is bounded by Grand Avenue, Illinois Street, McClurg Court and Columbus Drive. At the time of the April 1996 Action Memorandum, the Site was a public parking lot. Since that time, pursuant to a Unilateral Administrative Order dated June 6, 1996, Kerr-McGee and the property owner conducted extensive removal activities at the Site. Presently, the Site owner, a successor to the owner-Respondent to the June 1996 UAO, is developing the property for residential and commercial building and uses.

As described more fully in the April 1996 Action Memorandum, the Site was once occupied by the Lindsay Light and Chemical Company which manufactured incandescent gas mantles for home and street lighting. Gas mantle manufacturing involves dipping gauze mantle bags into solutions containing thorium nitrate. The principal ingredient in thorium nitrate is radioactive thorium, specifically thorium -232 and thorium -228. Thorium 232, which is the parent of the Thorium Decay Series, has a half-life of 14 billion years. It is believed that the principal source of contamination at this Site and under the adjacent rights-of-way is the Thorium Decay Series (Thorium Residuals).



## Current Site Conditions

Pursuant to the June 1996 UAO, the Respondents conducted extensive removal activities at the Site including the investigation and removal of on-site thorium and the surveying of off-site thorium under portions of the public rights-of-ways adjacent to the Site. The Site is no longer a paved public parking lot as described in the June 1996 Action Memorandum. The Site owner is developing the property for residential and commercial uses, including condominiums, theaters, hotels, and underground parking. The removal investigation and removal activities detected thorium under the rights-of-way beneath Illinois Street, Columbus Drive, and Grand Avenue in the concentrations and in the locations shown in Attachment A to this Amended Action Memorandum. The asphalt, concrete, and soils presently covering the thorium contamination effectively prevent the release of radiation from the materials into the environment, however, if those materials are exposed then the materials may pose a threat to human health and the environment.

The City of Chicago's Department of Environment, the Illinois Environmental Protection Agency, and the Illinois Department of Nuclear Safety (IDNS) are aware of site conditions, the removal actions and plans described in the Amended Action Memorandum.

### **III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES**

The conditions at the Lindsay Light II site present an imminent and substantial endangerment to public health or welfare or the environment based upon factors set forth in the National Contingency Plan (NCP), Section 300.415(b)(2), specifically:

- a) Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;

This factor is present at the site due to the existence of Thorium Residuals under the adjacent rights-of-way found to have radioactive contamination as high as 600 picocuries per gram. This reading is nearly 300 times the background level measured for this site. Although presently shielded by asphalt, concrete, or soil the Thorium Residuals are located in the path of water, gas, sewer, electric and other utilities and radiation may be encountered by any person who excavates the shielding asphalt, concrete or soils or operates under the rights-of-way to conduct underground utility replacement or maintenance activities.

- b) High levels of hazardous substances, pollutants or contaminants in soils largely at or near the surface, that may migrate;

As was noted in a) above, the Thorium Residuals are located under the right-of-way and in the path of various utilities. If the concrete, asphalt, or soils are excavated or if any person operates under the rights-of-way and disturbs the contaminants, the Thorium Residuals will contaminate the intruder and his or her equipment, and lead to dispersal of the thorium contaminants from its present locations.

U.S. EPA has evaluated the risk posed by the residual contamination and determined it does not pose a threat to human health and the environment as long as it is shielded by asphalt or concrete and left undisturbed. If exposed or disturbed, however, it must be properly managed to avoid any release to the environment or threat to human health.

#### IV. ENDANGERMENT DETERMINATION

Given the site conditions, the nature of the hazardous substances on the site, and the potential exposure pathways to nearby populations described in Sections II and III above, actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to human health, or welfare, or the environment.

#### V. PROPOSED ACTIONS AND ESTIMATED COSTS

To eliminate the need to implement 40 C.F.R. 192, which at this Site resulted in a cleanup criterion of 5 picocuries over background radiation for each 15 centimeter layer of soil, U.S. EPA requires assurance as the streets and underground utilities are installed, maintained or replaced, whether on a routine or emergency basis, that radiation surveillance will be conducted before and during excavation, that workers will be protected, and that all residual contamination will be managed and disposed of in accordance with state and federal requirements. Given the long-lived nature of thorium contamination (i.e. a half-life of 14 billion years) it is critical to the protection of human health and the environment, that these assurances will remain effective until the thorium contamination is removed. The OSCs propose to undertake the following actions to mitigate threats posed by the presence of Thorium Residuals under the rights-of-way adjacent to and surrounding the Site:

The City of Chicago, Kerr-McGee Chemical L.L.C., and River East L.L.C. enter into a binding Right-of-Way Agreement that runs with the land and that contains the following provisions:

- 1) the City will restrict routine and emergency access to the residual contamination; and
  - 2) the City will notify all utilities and affected City departments of the presence of the contamination in the rights-of-way; and
  - 3) the City will provide written notice to U.S. EPA whenever any permit to work in a right-of-way has been requested; and
  - 4) the City will establish and maintain a database that will notify 1) any party seeking to install, repair or replace underground utilities or conduct street repairs that involve the removal of the surface materials; and 2) any party that otherwise seeks access to the soils beneath the rights-of-way, that it is required to conduct radiation surveillance, comply with an approved health and safety plan, and properly manage any exposed or disturbed Thorium Residuals, in accordance with state and federal requirements; and
  - 5) the City Supervisor of Maps and Plats, shall indicate on the official City plat (Book \_\_Page \_\_) a notice that thorium contamination is present in the rights-of-way and that the rights-of-way must not be disturbed prior to consultation with the Chicago Department of Transportation and the Chicago Board of Underground or their successor agencies and notice to U.S. EPA or its successor agency in accordance with the Right-of-Way Agreement Numbered \_\_\_\_\_; " and/or
- the Right-of-Way Agreement shall be recorded with the Cook County Recorder of Deeds and shall run with the land of the rights-of-way; and
- 6) River East and Kerr McGee will place and maintain placards in any underground access in the rights-of-way that state "Before Work, Contact Chicago Department of Transportation."

This post-removal site control is recommended at this site, consistent with the provisions of Section 300.415(k) of the NCP. The solution should incur no operation and maintenance costs.

The response actions described in this memorandum directly address actual and threatened releases of hazardous substances, pollutants or contaminants at the facility which may pose an imminent and substantial endangerment to human health and safety and to the environment. These response actions do not impose a burden on affected property disproportionate to the extent to

which that property contributes to the conditions being addressed.

#### Applicable or Relevant and Appropriate Requirements (ARARS)

All applicable or relevant and appropriate requirements (ARARS) of Federal and State law will be complied with to the extent practicable.

The primary federal ARAR for soil cleanup criteria is Title 40, Part 192 of the Code of Federal Regulations, "Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings." Ancillary ARARS include the NRC's Title 10, Part 20, of the Code of Federal Regulations, "Standards for Protection Against Radiation," NRC Regulatory Guide 1.86, "Termination of Operating License for Nuclear Reactors," and the Department of Transportation's Title 49 for shipping hazardous materials. Also, many of the regulations carried out by NRC have been delegated to IDNS.

The IDNS has determined that the thorium is Section 11(e)(2) material, 42 U.S.C. 2014(e)(2) from the thorium processing carried out by Lindsay Light and Chemical Corporation.

In accordance with the revised NCP, Section 300.825(a)(1), a list of State ARARS will be added to the administrative record.

The actions proposed for this site will attempt to mitigate an adverse effect to the environment that has already occurred.

#### VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN.

Delayed action increases the potential for disturbance or exposure of the thorium contamination, the improper management of the contaminated material, and exposure to utility and road workers.

#### VII. OUTSTANDING POLICY ISSUES

None.

#### VIII. ENFORCEMENT

For administrative purposes, information concerning the enforcement strategy for this site is contained in an Enforcement Confidential addendum.

## IX. RECOMMENDATION

This decision document represents the selected removal action for the Lindsay Light Site underground Thorium Residuals contamination present in the rights-of-way adjacent to the Lindsay Light II Site in Chicago, Illinois. This removal action was developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based on the Administrative Record for the site. Conditions at the site meet the NCP Section 300.415(b)(2) criteria for a removal and we recommend your approval of the proposed removal action.

APPROVED: \_\_\_\_\_

*W. E. Myer*  
Director, Superfund Division

DATE: \_\_\_\_\_

*9/22/99*

DISAPPROVED: \_\_\_\_\_

Director, Superfund Division

DATE: \_\_\_\_\_

### Confidential Enforcement Addendum

Attachment 1: April 22, 1996 Action Memorandum

Attachment 2: Rights of Way and Location of Thorium Residuals

Attachment 3: Index to Administrative Record

cc: Kevin Mould, U.S. EPA, OERR, 5202-G

Michael Chezik, U.S. Department of Interior

Tom Skinner, Director, Illinois Environmental  
Protection Agency

Steve Davis, Illinois Department of Natural  
Resources

Thomas W. Ortciger, Director, Illinois Department of Nuclear  
Safety

**LINDSAY LIGHT II SITE  
Chicago, Illinois  
Administrative Record - Update #7**

**BCC Page  
1 - Page**

**REDACTED**

**NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION**

**LINDSAY LIGHT II SITE  
Chicago, Illinois  
Administrative Record - Update #7**

**ENFORCEMENT ADDENDUM - April 1994  
2 - Pages**

**REDACTED**

**NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION**

**LINDSAY LIGHT II SITE  
Chicago, Illinois  
Administrative Record - Update #7**

**ENFORCEMENT ADDENDUM - Sept. 1995  
2 - Pages**

**REDACTED**

**NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION**



**LINDSAY LIGHT II SITE  
Chicago, Illinois  
Administrative Record - Update #7**

**ENFORCEMENT ADDENDUM - April 1996  
2 - Pages**

**REDACTED**

**NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION**

**LINDSAY LIGHT II SITE  
Chicago, Illinois  
Administrative Record - Update #7**

**ENFORCEMENT ADDENDUM - Sept. 1999  
2 - Pages**

**REDACTED**

**NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION**

## Three Attachments

1. Action Memorandum dated July 11, 1994
2. Action Memorandum dated October 5, 1995
3. Index to the Administrative Record

cc: E. Watkins, U.S. EPA HQ, 5202G  
D. Henne, U.S. Department of Interior  
G. King, IEPA Superfund Coordinator  
J. Klinger/T. Runyon, Illinois Department of Nuclear Safety  
L. Robinson, City of Chicago

bcc:

HM-7J

**LINDSAY LIGHT II SITE  
Chicago, Illinois  
Administrative Record - Update #7**

**BCC Page  
1 - Page**

**REDACTED**

**NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION**



# ATTACHMENT - 2



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

SEP 22 1999

REPLY TO THE ATTENTION OF

SE-5J

## MEMORANDUM

DATE:

SUBJECT: ACTION MEMORANDUM AMENDMENT - DETERMINATION THAT  
SPECIFIC INSTITUTIONAL CONTROLS ARE ADEQUATE TO ABATE  
THE THREAT TO PUBLIC HEALTH AND THE ENVIRONMENT FROM  
THE THORIUM UNDER THE RIGHTS-OF-WAY ADJACENT TO THE  
LINDSAY LIGHT II SITE CHICAGO, COOK COUNTY, ILLINOIS  
(SITE SPILL ID #YT)

FROM: Verneta J. Simon, On-Scene Coordinator  
Fredrick A. Micke, On-Scene Coordinator *Fredrick A. Micke*  
Emergency Response Branch - Section III

TO: William E. Muno, Director  
Superfund Division

THRU: Richard Karl, Chief  
Emergency Response Branch

### I. PURPOSE

The purpose of this Action Memorandum Amendment is to document the determination that specific institutional controls are adequate to protect human health and the environment with respect to thorium present under the public rights-of-way adjacent to the Lindsay Light II Site. In an Action Memorandum dated April 22, 1996, which determinations are fully incorporated into this Action Memorandum Amendment by reference, U.S. EPA documented its determination that an imminent and substantial threat to human health and the environment existed at the Lindsay Light II Site due to the presence of thorium and also proposed necessary actions to abate that threat. The April 1996 Action Memorandum proposed a necessary removal action in section V., paragraph 6 to:

"[c]onduct off-site surveying and sampling as necessary and, at a minimum, implement 40 C.F.R. 192, if deemed necessary, should contamination be discovered beyond the site boundaries."

This Amended Action Memorandum documents the conduct of surveying and sampling adjacent to the Site and proposes specific institutional controls that should abate any remaining exposure threat associated with the thorium located under the City of Chicago rights-of-way adjacent to the Site. These specific institutional controls will eliminate the need to implement 40 C.F.R. 192 (i.e. the removal of contaminated soil to a cleanup level of 5 picocuries per gram total radium (radium-226 + radium-228) over background) with respect to the off-site thorium located under the adjacent rights-of-way. The institutional controls restrict access to the thorium underlying the rights-of-way and provide for the protection of human health and the environment through proper management of the thorium consistent with applicable and relevant and appropriate environmental regulations, if any person operates under the affected rights-of-way.

This site is not on the National Priorities List (NPL), has not been ranked, does not set any precedents, and is not nationally significant.

## II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID # ILD0000002212

The Lindsay Light II Site is a three-acre site located at 316 East Illinois Street, Chicago, Cook County Illinois. The Site is bounded by Grand Avenue, Illinois Street, McClurg Court and Columbus Drive. At the time of the April 1996 Action Memorandum, the Site was a public parking lot. Since that time, pursuant to a Unilateral Administrative Order dated June 6, 1996, Kerr-McGee and the property owner conducted extensive removal activities at the Site. Presently, the Site owner, a successor to the owner-Respondent to the June 1996 UAO, is developing the property for residential and commercial building and uses.

As described more fully in the April 1996 Action Memorandum, the Site was once occupied by the Lindsay Light and Chemical Company which manufactured incandescent gas mantles for home and street lighting. Gas mantle manufacturing involves dipping gauze mantle bags into solutions containing thorium nitrate. The principal ingredient in thorium nitrate is radioactive thorium, specifically thorium -232 and thorium -228. Thorium 232, which is the parent of the Thorium Decay Series, has a half-life of 14 billion years. It is believed that the principal source of contamination at this Site and under the adjacent rights-of-way is the Thorium Decay Series (Thorium Residuals).



## **Current Site Conditions**

Pursuant to the June 1996 UAO, the Respondents conducted extensive removal activities at the Site including the investigation and removal of on-site thorium and the surveying of off-site thorium under portions of the public rights-of-ways adjacent to the Site. The Site is no longer a paved public parking lot as described in the June 1996 Action Memorandum. The Site owner is developing the property for residential and commercial uses, including condominiums, theaters, hotels, and underground parking. The removal investigation and removal activities detected thorium under the rights-of-way beneath Illinois Street, Columbus Drive, and Grand Avenue in the concentrations and in the locations shown in Attachment A to this Amended Action Memorandum. The asphalt, concrete, and soils presently covering the thorium contamination effectively prevent the release of radiation from the materials into the environment, however, if those materials are exposed then the materials may pose a threat to human health and the environment.

The City of Chicago's Department of Environment, the Illinois Environmental Protection Agency, and the Illinois Department of Nuclear Safety (IDNS) are aware of site conditions, the removal actions and plans described in the Amended Action Memorandum.

## **III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES**

The conditions at the Lindsay Light II site present an imminent and substantial endangerment to public health or welfare or the environment based upon factors set forth in the National Contingency Plan (NCP), Section 300.415(b)(2), specifically:

- a) Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;

This factor is present at the site due to the existence of Thorium Residuals under the adjacent rights-of-way found to have radioactive contamination as high as 600 picocuries per gram. This reading is nearly 300 times the background level measured for this site. Although presently shielded by asphalt, concrete, or soil the Thorium Residuals are located in the path of water, gas, sewer, electric and other utilities and radiation may be encountered by any person who excavates the shielding asphalt, concrete or soils or operates under the rights-of-way to conduct underground utility replacement or maintenance activities.

- b) High levels of hazardous substances, pollutants or contaminants in soils largely at or near the surface, that may migrate;

As was noted in a) above, the Thorium Residuals are located under the right-of-way and in the path of various utilities. If the concrete, asphalt, or soils are excavated or if any person operates under the rights-of-way and disturbs the contaminants, the Thorium Residuals will contaminate the intruder and his or her equipment, and lead to dispersal of the thorium contaminants from its present locations.

U.S. EPA has evaluated the risk posed by the residual contamination and determined it does not pose a threat to human health and the environment as long as it is shielded by asphalt or concrete and left undisturbed. If exposed or disturbed, however, it must be properly managed to avoid any release to the environment or threat to human health.

#### IV. ENDANGERMENT DETERMINATION

Given the site conditions, the nature of the hazardous substances on the site, and the potential exposure pathways to nearby populations described in Sections II and III above, actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to human health, or welfare, or the environment.

#### V. PROPOSED ACTIONS AND ESTIMATED COSTS

To eliminate the need to implement 40 C.F.R. 192, which at this Site resulted in a cleanup criterion of 5 picocuries over background radiation for each 15 centimeter layer of soil, U.S. EPA requires assurance as the streets and underground utilities are installed, maintained or replaced, whether on a routine or emergency basis, that radiation surveillance will be conducted before and during excavation, that workers will be protected, and that all residual contamination will be managed and disposed of in accordance with state and federal requirements. Given the long-lived nature of thorium contamination (i.e. a half-life of 14 billion years) it is critical to the protection of human health and the environment, that these assurances will remain effective until the thorium contamination is removed. The OSCs propose to undertake the following actions to mitigate threats posed by the presence of Thorium Residuals under the rights-of-way adjacent to and surrounding the Site:

The City of Chicago, Kerr-McGee Chemical L.L.C., and River East L.L.C. enter into a binding Right-of-Way Agreement that runs with the land and that contains the following provisions:

- 1) the City will restrict routine and emergency access to the residual contamination; and
- 2) the City will notify all utilities and affected City departments of the presence of the contamination in the rights-of-way; and
- 3) the City will provide written notice to U.S. EPA whenever any permit to work in a right-of-way has been requested; and
- 4) the City will establish and maintain a database that will notify 1) any party seeking to install, repair or replace underground utilities or conduct street repairs that involve the removal of the surface materials; and 2) any party that otherwise seeks access to the soils beneath the rights-of-way, that it is required to conduct radiation surveillance, comply with an approved health and safety plan, and properly manage any exposed or disturbed Thorium Residuals, in accordance with state and federal requirements; and
- 5) the City Supervisor of Maps and Plats, shall indicate on the official City plat (Book \_\_ Page \_\_) a notice that thorium contamination is present in the rights-of-way and that the rights-of-way must not be disturbed prior to consultation with the Chicago Department of Transportation and the Chicago Board of Underground or their successor agencies and notice to U.S. EPA or its successor agency in accordance with the Right-of-Way Agreement Numbered \_\_\_\_\_; and/or  
  
the Right-of-Way Agreement shall be recorded with the Cook County Recorder of Deeds and shall run with the land of the rights-of-way; and
- 6) River East and Kerr McGee will place and maintain placards in any underground access in the rights-of-way that state "Before Work, Contact Chicago Department of Transportation."

This post-removal site control is recommended at this site, consistent with the provisions of Section 300.415(k) of the NCP. The solution should incur no operation and maintenance costs.

The response actions described in this memorandum directly address actual and threatened releases of hazardous substances, pollutants or contaminants at the facility which may pose an imminent and substantial endangerment to human health and safety and to the environment. These response actions do not impose a burden on affected property disproportionate to the extent to

which that property contributes to the conditions being addressed.

#### Applicable or Relevant and Appropriate Requirements (ARARS)

All applicable or relevant and appropriate requirements (ARARS) of Federal and State law will be complied with to the extent practicable.

The primary federal ARAR for soil cleanup criteria is Title 40, Part 192 of the Code of Federal Regulations, "Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings." Ancillary ARARS include the NRC's Title 10, Part 20, of the Code of Federal Regulations, "Standards for Protection Against Radiation," NRC Regulatory Guide 1.86, "Termination of Operating License for Nuclear Reactors," and the Department of Transportation's Title 49 for shipping hazardous materials. Also, many of the regulations carried out by NRC have been delegated to IDNS.

The IDNS has determined that the thorium is Section 11(e)(2) material, 42 U.S.C. 2014(e)(2) from the thorium processing carried out by Lindsay Light and Chemical Corporation.

In accordance with the revised NCP, Section 300.825(a)(1), a list of State ARARS will added to the administrative record.

The actions proposed for this site will attempt to mitigate an adverse effect to the environment that has already occurred.

#### VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN.

Delayed action increases the potential for disturbance or exposure of the thorium contamination, the improper management of the contaminated material, and exposure to utility and road workers.

#### VII. OUTSTANDING POLICY ISSUES

None.

#### VIII. ENFORCEMENT

For administrative purposes, information concerning the enforcement strategy for this site is contained in an Enforcement Confidential addendum.

## IX. RECOMMENDATION

This decision document represents the selected removal action for the Lindsay Light Site underground Thorium Residuals contamination present in the rights-of-way adjacent to the Lindsay Light II Site in Chicago, Illinois. This removal action was developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based on the Administrative Record for the site. Conditions at the site meet the NCP Section 300.415(b)(2) criteria for a removal and we recommend your approval of the proposed removal action.

APPROVED: \_\_\_\_\_

*W. E. Munn*  
Director, Superfund Division

DATE: \_\_\_\_\_

9/22/99

DISAPPROVED: \_\_\_\_\_

Director, Superfund Division

DATE: \_\_\_\_\_

### Confidential Enforcement Addendum

Attachment 1: April 22, 1996 Action Memorandum

Attachment 2: Rights of Way and Location of Thorium Residuals

Attachment 3: Index to Administrative Record

cc: Kevin Mould, U.S. EPA, OERR, 5202-G

Michael Chezik, U.S. Department of Interior

Tom Skinner, Director, Illinois Environmental  
Protection Agency

Steve Davis, Illinois Department of Natural  
Resources

Thomas W. Ortciger, Director, Illinois Department of Nuclear  
Safety

**LINDSAY LIGHT II SITE  
Chicago, Illinois  
Administrative Record - Update #7**

**BCC Page  
1 - Page**

**REDACTED**

**NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION**

**LINDSAY LIGHT II SITE**  
**Chicago, Illinois**  
**Administrative Record - Update #7**

**ENFORCEMENT ADDENDUM - April 1994**  
**2 - Pages**

**REDACTED**

**NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION**

**LINDSAY LIGHT II SITE  
Chicago, Illinois  
Administrative Record - Update #7**

**ENFORCEMENT ADDENDUM - Sept. 1995  
2 - Pages**

**REDACTED**

**NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION**



**LINDSAY LIGHT II SITE  
Chicago, Illinois  
Administrative Record - Update #7**

**ENFORCEMENT ADDENDUM - April 1996  
2 - Pages**

**REDACTED**

**NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION**

**LINDSAY LIGHT II SITE  
Chicago, Illinois  
Administrative Record - Update #7**

**ENFORCEMENT ADDENDUM - Sept. 1999  
2 - Pages**

**REDACTED**

**NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION**

**Three Attachments**

1. Action Memorandum dated July 11, 1994
2. Action Memorandum dated October 5, 1995
3. Index to the Administrative Record

cc: E. Watkins, U.S. EPA HQ, 5202G  
D. Henne, U.S. Department of Interior  
G. King, IEPA Superfund Coordinator  
J. Klinger/T.Runyon, Illinois Department of Nuclear Safety  
L. Robinson, City of Chicago

bcc:

HM-7J

**LINDSAY LIGHT II SITE  
Chicago, Illinois  
Administrative Record - Update #7**

**BCC Page  
1 - Page**

**REDACTED**

**NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION**

# ATTACHMENT - 3



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGIONAL OFFICE  
WEST NORTH CENTRAL  
CHICAGO, ILLINOIS 60601

MAY 20 1995

SE-5J

## MEMORANDUM

### DATE:

**SUBJECT:** ACTION MEMORANDUM - Determination of Threat to Public Health and the Environment at the Lindsay Light II Site Chicago, Cook County, Illinois (Site Spill ID # YT)

**FROM:** V.J. Simon, On-Scene Coordinator *V.J. Simon*  
Emergency and Enforcement Response Branch

**TO:** William E. Muno, Director  
Superfund Division

### I. PURPOSE

The purpose of this Memorandum is to document the determination of an imminent and substantial threat to public health and the environment posed by the presence of thorium at the Lindsay Light II site. Currently, Lindsay Light II is a public parking lot, which is paved with asphalt, that has gamma levels as high as 252 times background or 1.1 milliRoentgen per hour<sup>1</sup>. A person using the parking lot could receive a  $10^{-4}$  risk with as little as 29 minutes exposure per day for a 250 day work year at the point of peak exposure.

Uranium and thorium soil concentrations have been measured to a limited extent and exceed background soil levels up to 43 and 812 times, respectively. From this data, radium levels can be projected. Assuming cleanup to the radium levels of Title 40, Part 192, of the Code of Federal Regulations (CFR), uranium and thorium mill tailings standards, present peak values would exceed cleanup levels by 222 times. The radium cleanup level in 40 CFR 192 is 5 picoCuries per gram.

In May 1994, an extent of contamination study was conducted by the property owner, The Chicago Dock & Canal Trust, as required by an Administrative Order by Consent (AOC) dated January 27, 1994. A major result from this study was that there were areas exhibiting elevated gamma levels as high or higher than U.S. EPA

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<sup>1</sup> For gamma radiation, milliRoentgen and millirem are numerically equal.

had previously detected which could be abated by removing thorium. It is anticipated that removal of the thorium will be undertaken pursuant to a Unilateral Administrative Order (UAO) by the potentially responsible parties (please see confidential enforcement addendum). The response activities will require approximately 60 on-site days to complete.

This site is not on the National Priorities List (NPL).

## II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID # ILD 0000002212

### A. Physical Location

The Lindsay Light II Site, a public parking lot, is located at 316 East Illinois Street, Chicago, Cook County, Illinois. This 3-acre Site is bounded by Grand Avenue, Illinois Street, McClurg Court and Columbus Drive and is situated in an urban area called the Gold Coast. This property is surrounded by commercial and residential buildings with a shopping mall located approximately 200 feet to the southeast. The Chicago River is located 1 mile south of the Site and Lake Michigan is about 1.5 miles east of the Site. This Site is surrounded by two-foot high steel guardrails; however, it does not totally restrict access. It is possible to step over the guardrails if you want to gain entry to the parking lot or use it as a short-cut. Also, there are two automated ticket entrances and two manned cash booths.

### B. Site description and background

The Lindsay Light II Site was once occupied by the Lindsay Light and Chemical Company, which made incandescent gas mantles for home and street lighting. Earlier reports show this company first imported and then manufactured mantles. These activities occurred from at least 1910 until 1936 at 161 East Grand, which is .25 miles west of the Site. It is unclear what Lindsay Light actually did at 316 East Illinois; however, records from the Dock and Canal Trust indicate this site was a stable, and that Lindsay Light leased portions of the building from Chicago Dock and Canal Trust from 1915-1933. Sometime after 1933, Lindsay Light moved to West Chicago, Illinois and was later purchased by American Potash, who in turn was purchased by Kerr-McGee Chemical Company.

Gas mantle manufacturing involves dipping gauze mantle bags into solutions containing thorium nitrate and small amounts of cerium, beryllium and magnesium nitrates. The principal ingredient in thorium nitrate is radioactive thorium, specifically, thorium-232 and thorium-228. Thorium-232, which is the parent of the Thorium Decay Series, has a half-life of 14 billion years. Thorium-228 has a 2 year half-life. It is believed that the principal source of contamination at this Site is the Thorium Decay Series.

### C. Current site conditions

Conditions have not changed since the site assessment on June 3, 1993. This property is still operated as a public parking lot.

### D. Other actions to date

From June 30, 1993 to July 30, 1993, each manned cash booth was monitored by a thermoluminescent dosimeter (TLD) badge. TLD results for these booths were as follows:

TLD #	
9035	0.00058 millirem per hour or about 1.2 millirem per year
9036	-0.00184 millirem per hour or -3.7 millirem per year (which means all values are effectively zero)

These results were compared to NRC regulations in the new Title 10, Part 20.1301, Code of Federal Regulations of 100 millirem per year and 2 millirem per hour for individual members of the general public. The above results did not exceed either of these relevant levels indicating that the attendants are not in any present danger.

During May 1994, field work necessary for the AOC-required extent of contamination study was conducted. This study was later submitted in a final report which was approved by U.S.EPA on March 13, 1996. A brief summary of the report would be as follows: 12 areas exhibiting elevated gamma levels, maximum contamination depth extends to 2.5 meters (8 feet) below the ground surface, and Resource Conservation and Recovery Act (RCRA) characteristic waste is not present on-site. The map included in this report has been reproduced in Figure 1 to show the 12 contaminated areas. Also during this two year period, The Chicago Dock & Canal Trust voluntarily placed notices at the entrances to the parking lot informing patrons of the risks associated with the lot.

The City of Chicago, the Illinois Environmental Protection Agency, and the Illinois Department of Nuclear Safety (IDNS) are aware of site conditions and plans described in this Action Memorandum.

### III. THREAT TO PUBLIC HEALTH OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Conditions at the Lindsay Light II site present an imminent and substantial endangerment to public health or welfare or the environment, based upon factors set forth in the National Contingency Plan (NCP), 40 CFR 300.115 (b) (2). These factors include:



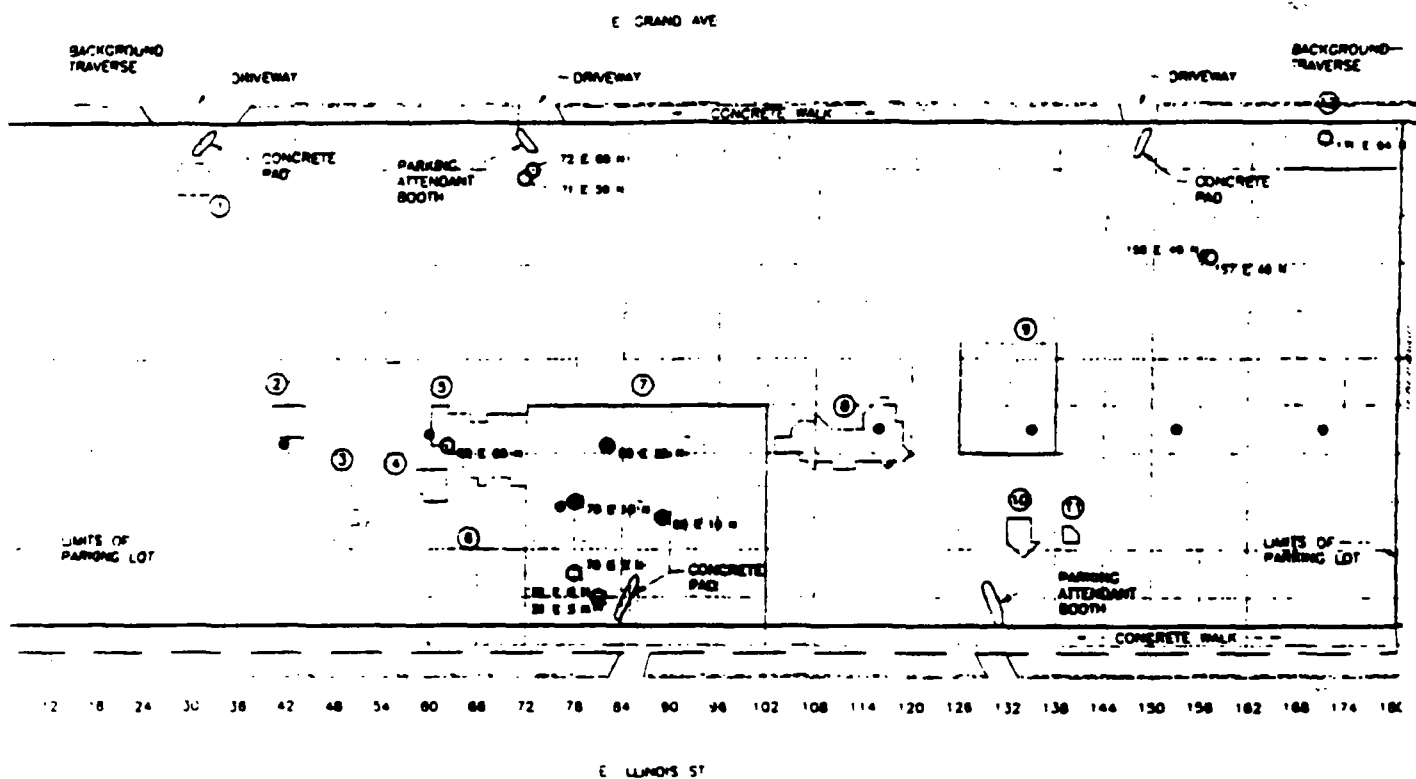


Figure 1: Extent of Contamination Map reproduced from Final Report prepared by STS Consultants, Ltd. (Deerfield, Illinois) to satisfy Administrative Order by Consent No. V-W-94-C-22

a) actual or potential exposure to nearby populations, animals, or the food chain from hazardous substances or pollutants or contaminants:

This factor is present at the site due to the existence of a public parking lot on property found to have gamma readings measured as high as 1.1 milliRoentgen per hour. This reading is 252 times the background level measured for the site.

Gamma rays are penetrating radiation indistinguishable from X-rays which can be absorbed by tissue in the human body, thereby increasing the cancer risk for the person exposed. The excess risk to a transient spending 29 minutes per day for a 250 day work year at this peak exposure spot is  $10^{-4}$ . Transients were judged to be parking lot customers, people using the lot for a short cut or temporary workers.

The excess risk to a parking lot attendant spending an 8 hour shift for 250 days per work year at this peak spot is  $2 \times 10^{-3}$ . Direct measurements with survey instruments at the present parking lot attendant stations found background radiation levels and these were confirmed with longer measurements using TLDs. There is no guarantee these stations could not be moved to the peak point at some future time, thereby introducing the potential for exposure and risk to be actualized.

b) high levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate:

The presence of elevated gamma exposure levels at the site validates subsurface deposits of radiological contaminants. The dominant concern is intrusion into these materials that will contaminate the intruder and their equipment and, further, lead to dispersal or spreading of the contaminants from its present locations. Such a scenario probably has arisen, and could again arise, with parking lot excavation where workers and their equipment are contaminated by radioactive soils, dry soil is dispersed in the wind and excavation spoils are moved offsite. The number of people exposed could be greatly increased and might include workers, their families if contaminants are carried home, workers who subsequently use contaminated machinery, residents near the parking lot who might be subject to wind dispersed soils and users of excavation spoils. Such spreading could occur within downtown Chicago where the parking lot is located and out for several miles depending upon where workers reside and where spoils are used. This is a plausible scenario since recent plans were to build a large hospital building on this site.

c) other situations or factors which may pose threats to public health or welfare or the environment:

This factor is present at the Site due to the property's potential for future development. Such construction might entail excavating into potentially contaminated soils for placement of building footings and cause increased releases into the environment and human exposure to contaminants. Also, it has not been determined whether subsurface contaminants are soluble. If they are there could be spreading via groundwater.

This site appears to be gridded with sewer lines. The sewers could be conduits for the spread of both soluble and insoluble materials offsite, for extension of the region of contamination and for an increase in the potential for workers (sewer workers) to be exposed.

#### **IV. ENDANGERMENT DETERMINATION**

Given the nature of the Site, with unrestricted access to contaminants, the nature of these contaminants - gamma rays, which can not be stopped but attenuated; and an exposure pathway of direct contact, as described in Sections II and III, the actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action described in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

#### **V. PROPOSED ACTIONS**

Removal activities at the Site are to include: removal of contamination from at least 12 areas in the parking lot and disposal of all characterized wastes identified and generated during removal activities.

Specifically, the following activities will be necessary:

- 1) Develop and implement site health, safety and security measures.
- 2) Develop and implement air monitoring program.
- 3) Remove contamination until the cleanup criterion of 5 picoCuries per gram total radium (radium-226 + radium-228) over background is achieved. This cleanup criterion will be met in each 15 centimeter layer below the surface. Averaging over areas up to 100 square meters will be allowed, but only after reasonable efforts have been made to achieve levels As Low As Reasonably Achievable (ALARA). It is not U.S. EPA's intent to leave any elevated areas of contamination if at all possible.
- 4) Establish local background for radium-226 and radium-228 from four soil samples taken on the property at points where the

gamma exposure rates are lowest plus eight soil samples taken off-site, but in the immediate vicinity, of the parking lot.

- 5) Transport and dispose of all characterized or identified hazardous substances, pollutants, wastes or contaminants at a RCRA/CERCLA/IDNS approved disposal facility in accordance with the U.S. EPA Off-Site Rule (58 F.R. 49200).
- 6) Conduct off-site surveying and sampling as necessary and, at a minimum, implement 40 CFR 192, if deemed necessary should contamination be discovered beyond current site boundaries.
- 7) Backfill all excavations with suitable material, and if soil, test borrow source for radioactivity and other pertinent characteristics in 40 CFR Part 261.

Removal activities will require approximately 60 on-site working days to complete. The threat posed by continual gamma-ray exposure meets the criteria listed in Section 300.415(b)(2) of the NCP and are consistent with any long-term remedial action which may be required.

The OSC has begun planning for the provision of post-removal site control, consistent with the provisions of Section 300.415(k) of the NCP. However, the nature of the removal should eliminate all exposure threats, which should minimize the need for post-removal site control.

The response actions described in this memorandum directly address actual or threatened releases of hazardous substances, pollutants or contaminants at the facility which may pose an imminent and substantial endangerment to public health and safety, and to the environment. These response actions do not impose a burden on the affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

#### Applicable or Relevant and Appropriate Requirements (ARARS)

All applicable or relevant and appropriate requirements (ARARS) of Federal law will be complied with to the extent practicable.

The primary Federal ARAR for soil cleanup criteria is Title 40, Part 192, of the Code of Federal Regulations, "Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings". Ancillary ARARS include the NRC's Title 10, Part 20, of the Code of Federal Regulations, "Standards for Protection Against Radiation", NRC Regulatory Guide 1.86, "Termination of Operating Licenses for Nuclear Reactors", and the Department of Transportation's Title 49 for shipping hazardous materials. Also, many of the regulations carried out by NRC have been delegated to IDNS.

U.S. EPA is awaiting a waste designation from IDNS. Once IDNS classifies the waste, U.S. EPA will incorporate that information into remediation of the Site. IDNS has state jurisdiction over the radiological contamination at the site.

In accordance with the revised NCP, Section 300.825(a)(1), a list of State ARARs will be added to the administrative record.

#### **VI. CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED**

Delayed or non-action may result in increased likelihood of direct contact threat to human populations accessing and working on the Site. Also, since there is no threshold for cancer the continued exposure to gamma rays will increase the cancer risk.

#### **VII. OUTSTANDING POLICY ISSUES**

The proposed action may result in U.S. EPA re-examining its position on the Lindsay Light I site, which is the building described in Section IIB. This building is also thorium-contaminated; however, gamma levels above background can not be detected outside the building. The only persons exposed to the contamination are occupants or visitors to this building. The Lindsay Light I site was referred to the Occupational Safety and Health Administration (OSHA) at two different times but they are constrained by their regulations.

#### **VIII. ENFORCEMENT**

For administrative purposes, information concerning confidential enforcement strategy for this site is contained in the Enforcement Confidential Addendum.

#### **IX. RECOMMENDATION**

This decision document represents the selected removal action for the Lindsay Light II site, in Chicago, Illinois, developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based upon the Administrative Record for this site. Conditions at the site meet the NCP Section 300.415(b)(2) criteria for a removal action. You may indicate your decision by signing below:

APPROVE: \_\_\_\_\_

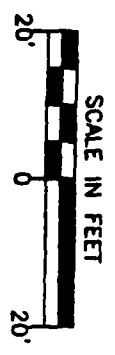
*W. E. Myers* 4/22/96  
DIRECTOR, SUPERFUND DIVISION

DISAPPROVE: \_\_\_\_\_

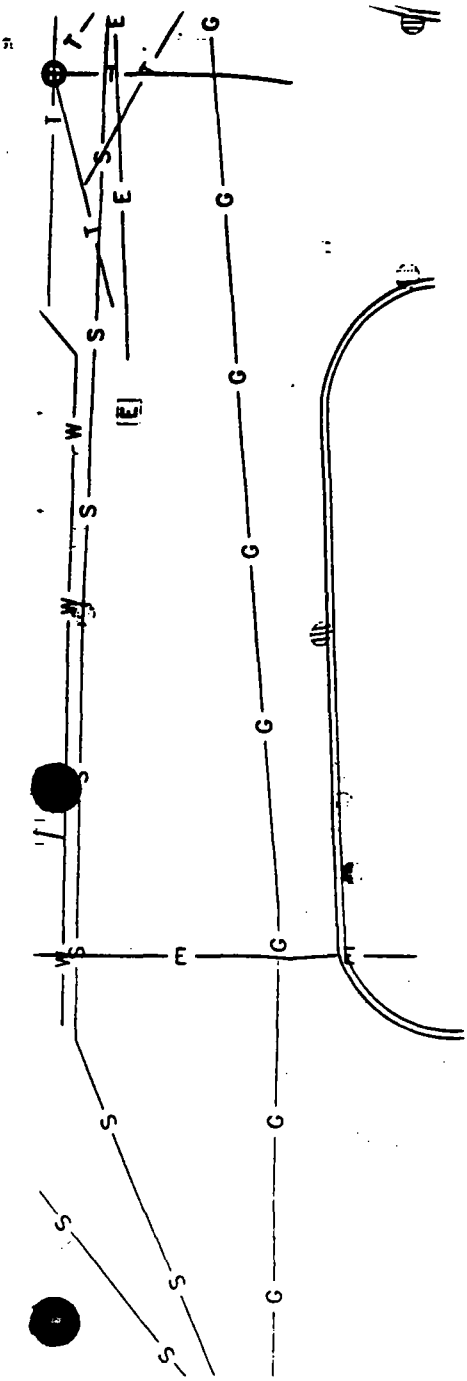
DIRECTOR, SUPERFUND DIVISION

Enforcement Confidential Addendum

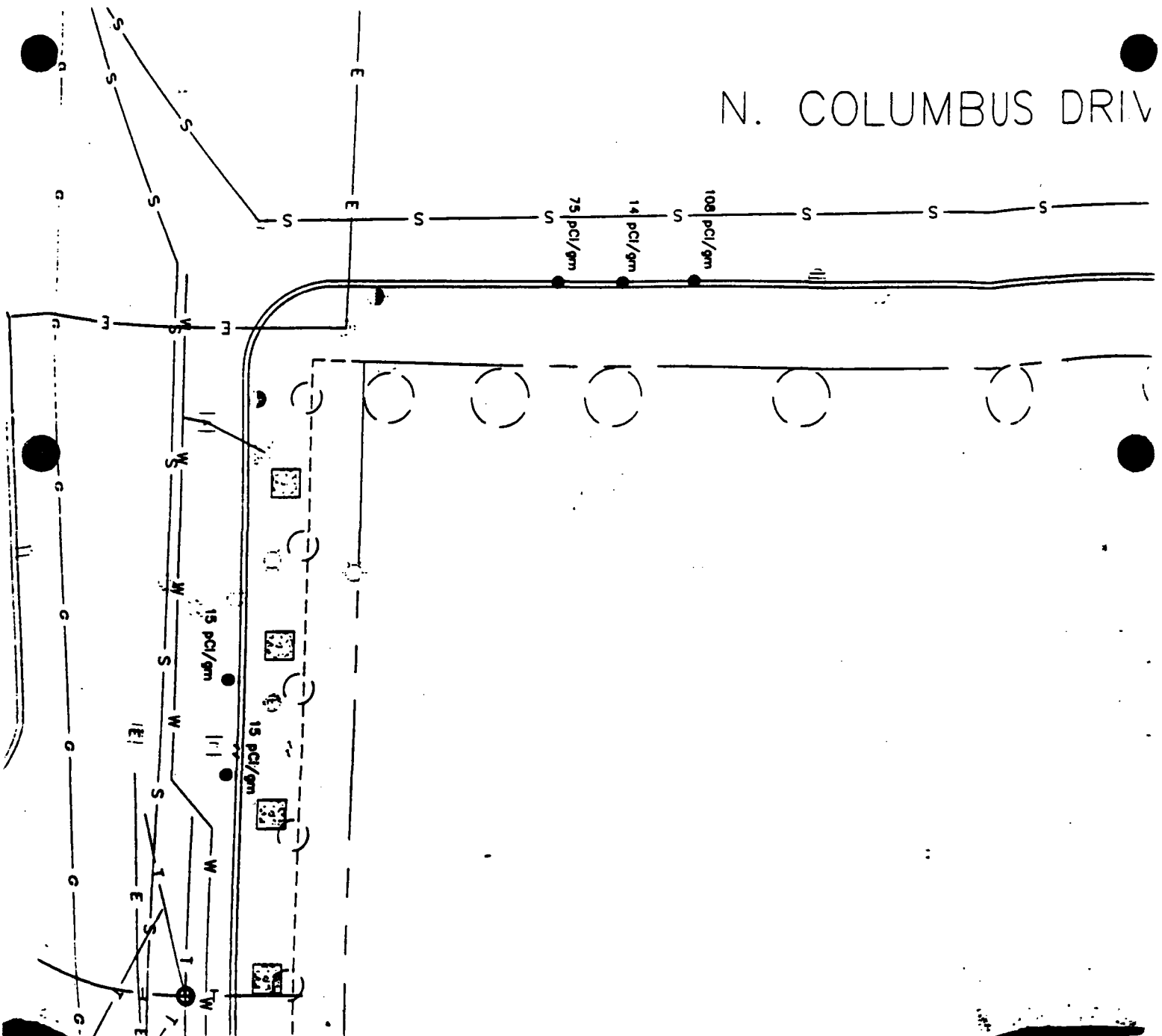
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DATE	4-13-98	5	GENERAL REVISIONS	5/19/99	TC
DATE	4-13-98	4	GENERAL REVISION	1/13/99	EJ
DATE	4-13-98	3	GENERAL REVISION	12/29/98	EJ
DATE	4-13-98	2	GENERAL REVISION	5/22/98	EJ
418\RR\		1	B.O.C. ISSUE	5/05/98	EJ
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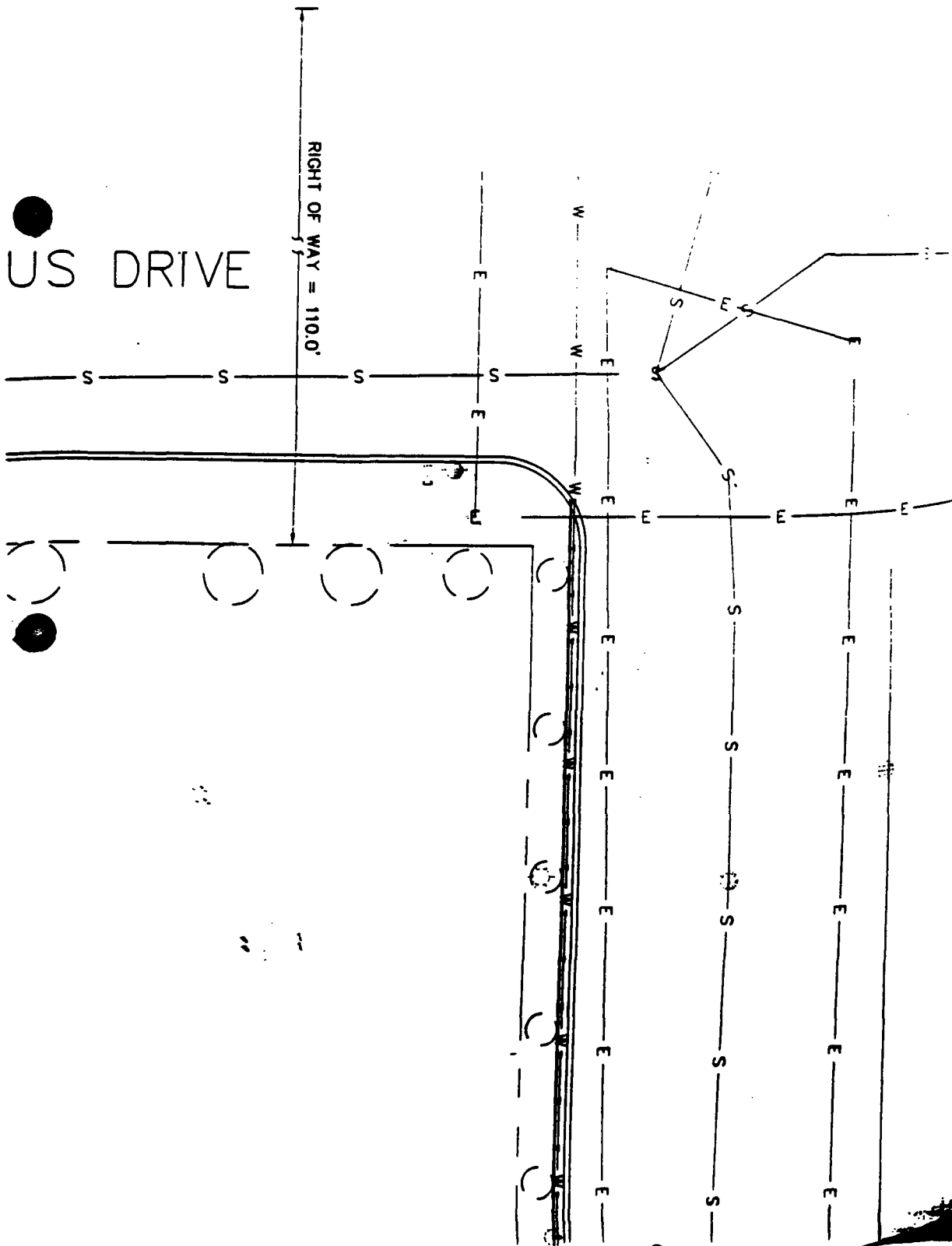
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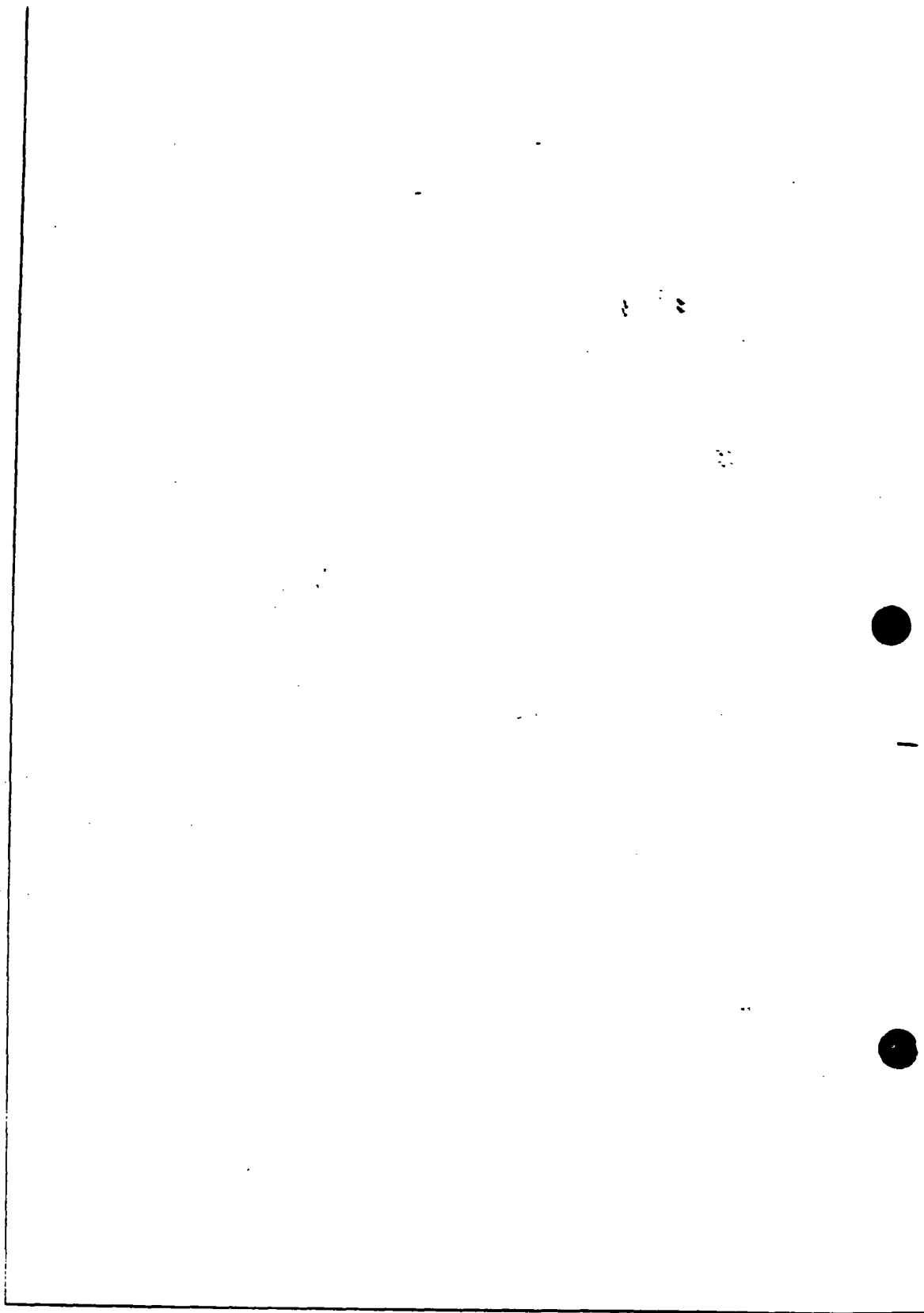


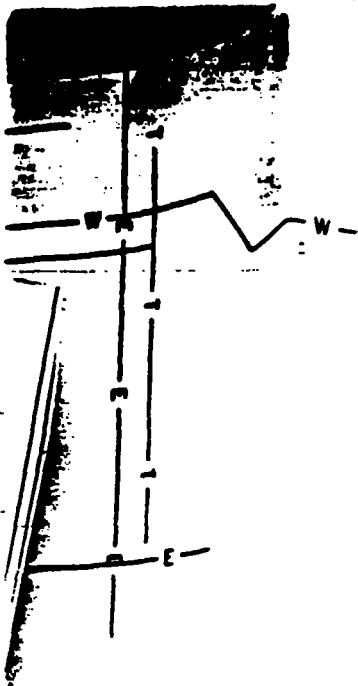


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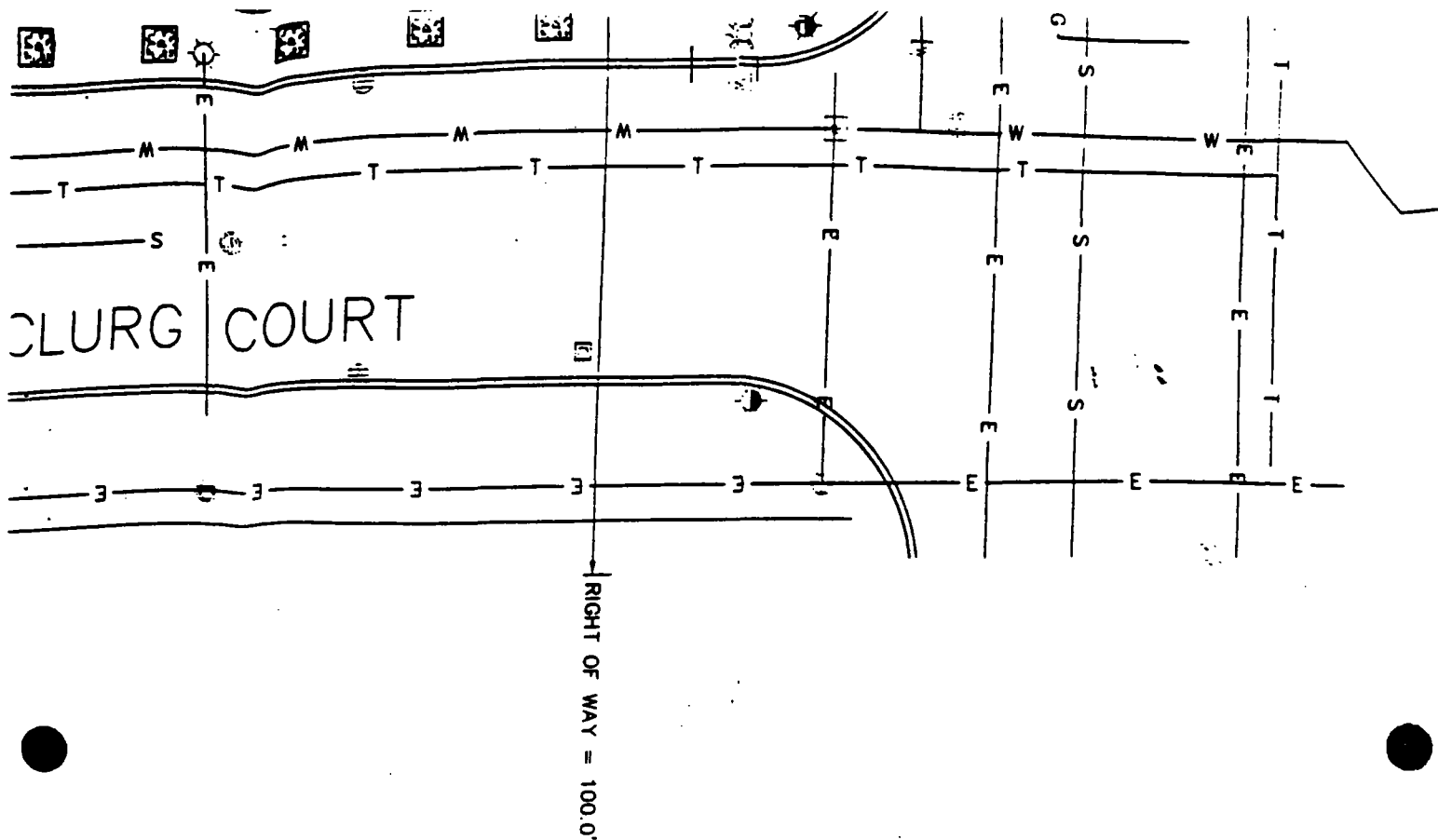
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MOUNTED RIGHTS-OF-WAY

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MIXED USE DEVELOPMENT  
500 EAST ILLINOIS STREET  
CHICAGO, ILLINOIS

DRAWN BY

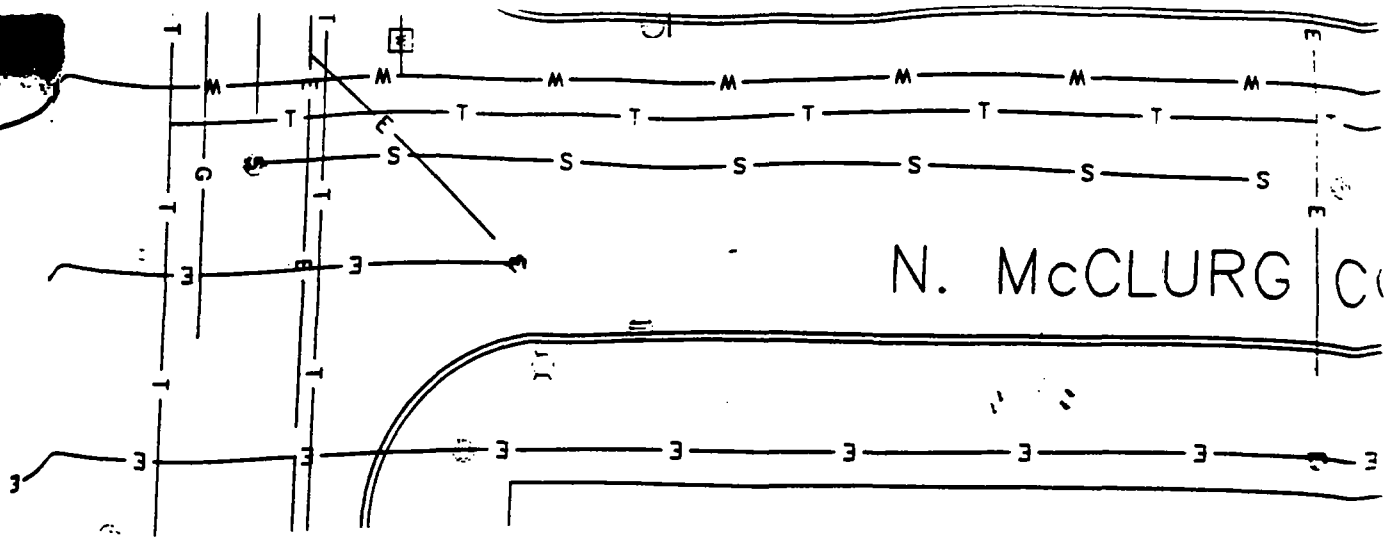
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IMPACTED RIGHTS-OF-

RIVER EAST CENTER  
MIXED USE DEVELOPMENT  
300 EAST ILLINOIS STREET  
CHICAGO, ILLINOIS

# LEGEND

LOCATION OF THORIUM IMPACTED SOIL AND  
MEASURED TOTAL RADIUM CONCENTRATION

pCi/gm

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TO BE VACATED" ON THE DRAWING ATTACHED TO THE CITY OF CHICAGO  
ORDINANCE ENACTED SEPTEMBER 1, 1999 AND NO PORTION OF THE ENC-  
ROACHMENTS APPROVED BY THE CITY OF CHICAGO ENACTED OCTOBER 7,  
1998 AND NO PORTION OF THE SITE LIES WITHIN THE AREA DESIGNATED  
THEREON AS "IMPACTED RIGHTS-OF-WAY"  
RIGHT-OF-WAY DIMENSIONS FROM 21st EDITION ATLAS OF COOK COUNTY,  
ILLINOIS, VOLUME 9, TH SIDWELL COMPANY, 1998



CASE FOUNDATION COMPANY

1111 W. Lake Street  
Chicago, IL 60606-3000  
Tel. 312.329.1000 Fax 312.329.1001

SIS PROJECT NUMBER

24418-RR

SIS PROJECT FILE

Gipson2.dwg

SCALE

AS SHOWN

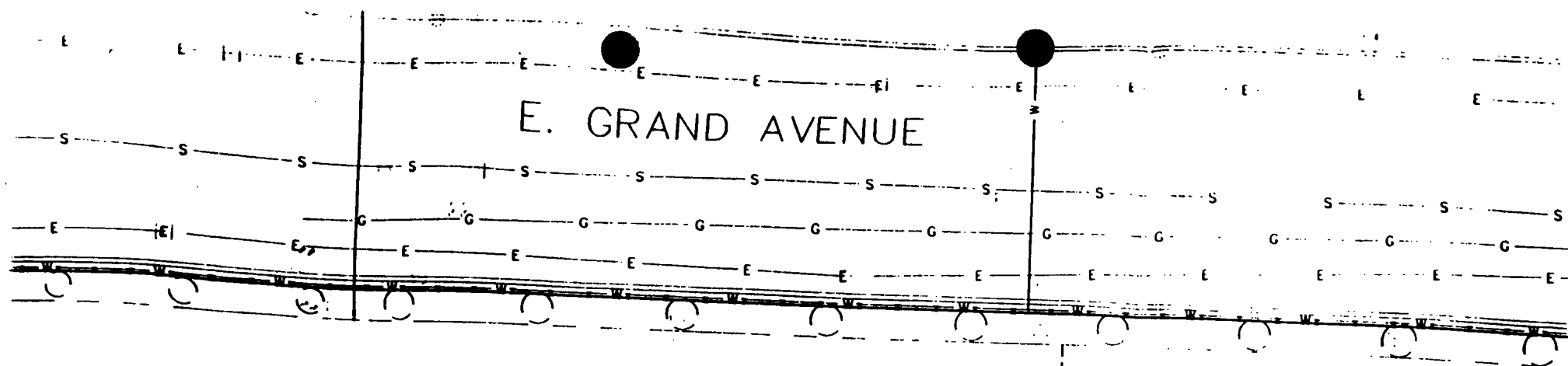
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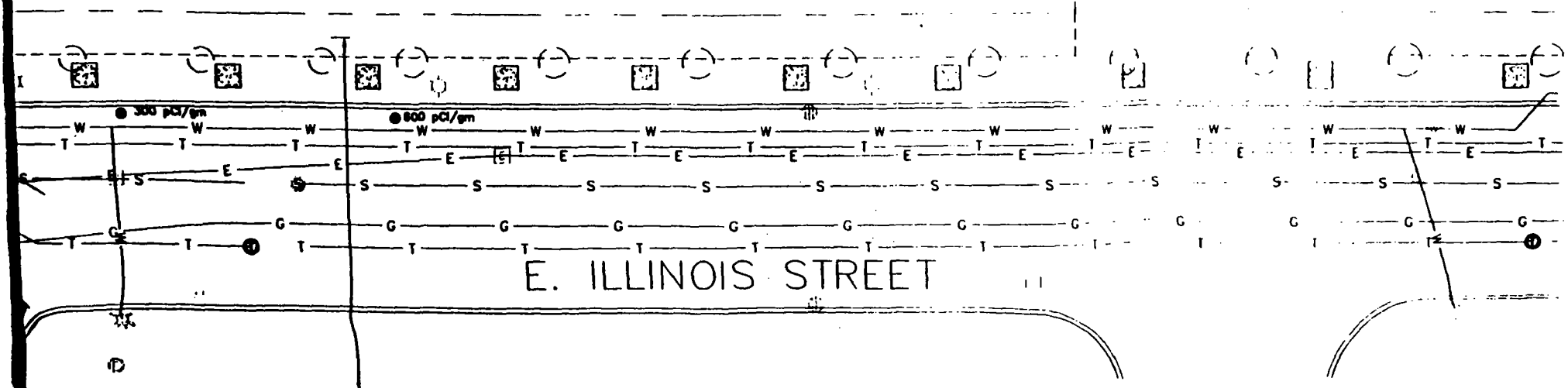
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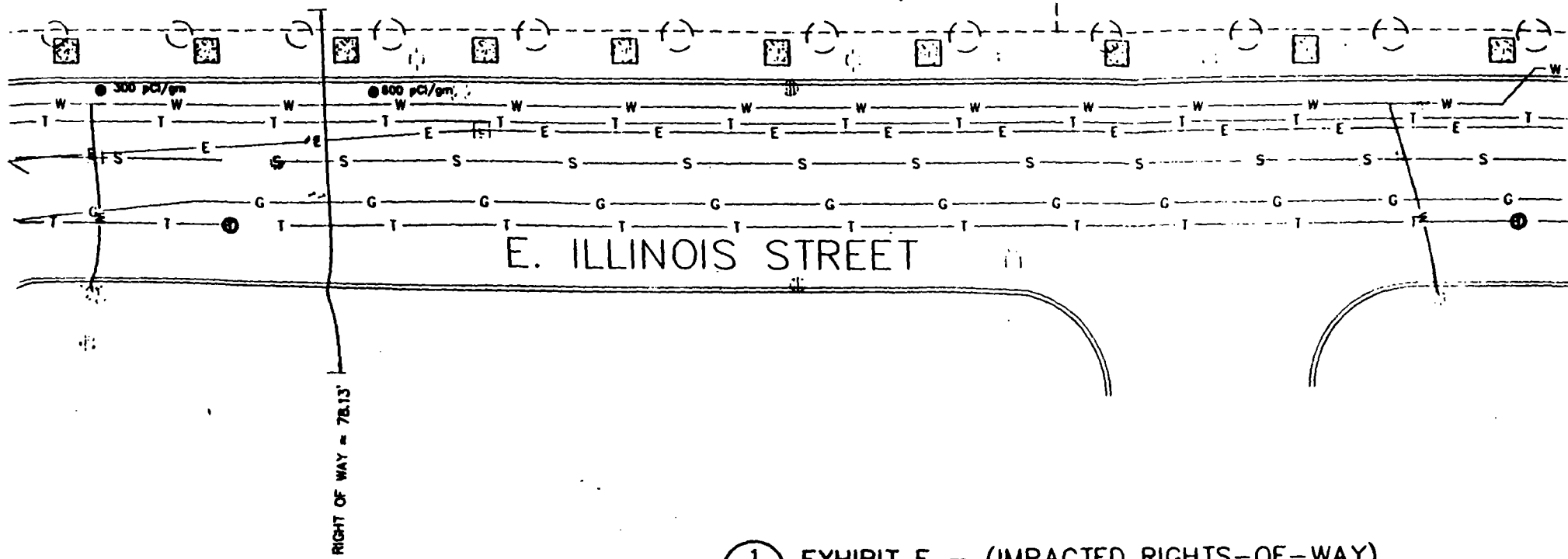
E. GRAND AVENUE

E. GRAND AVENUE





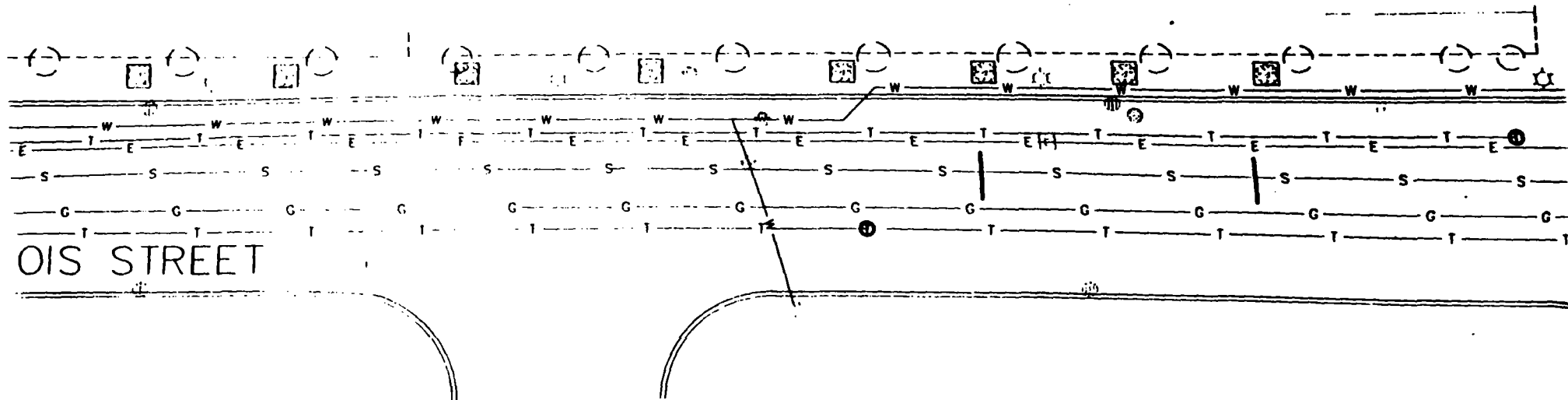




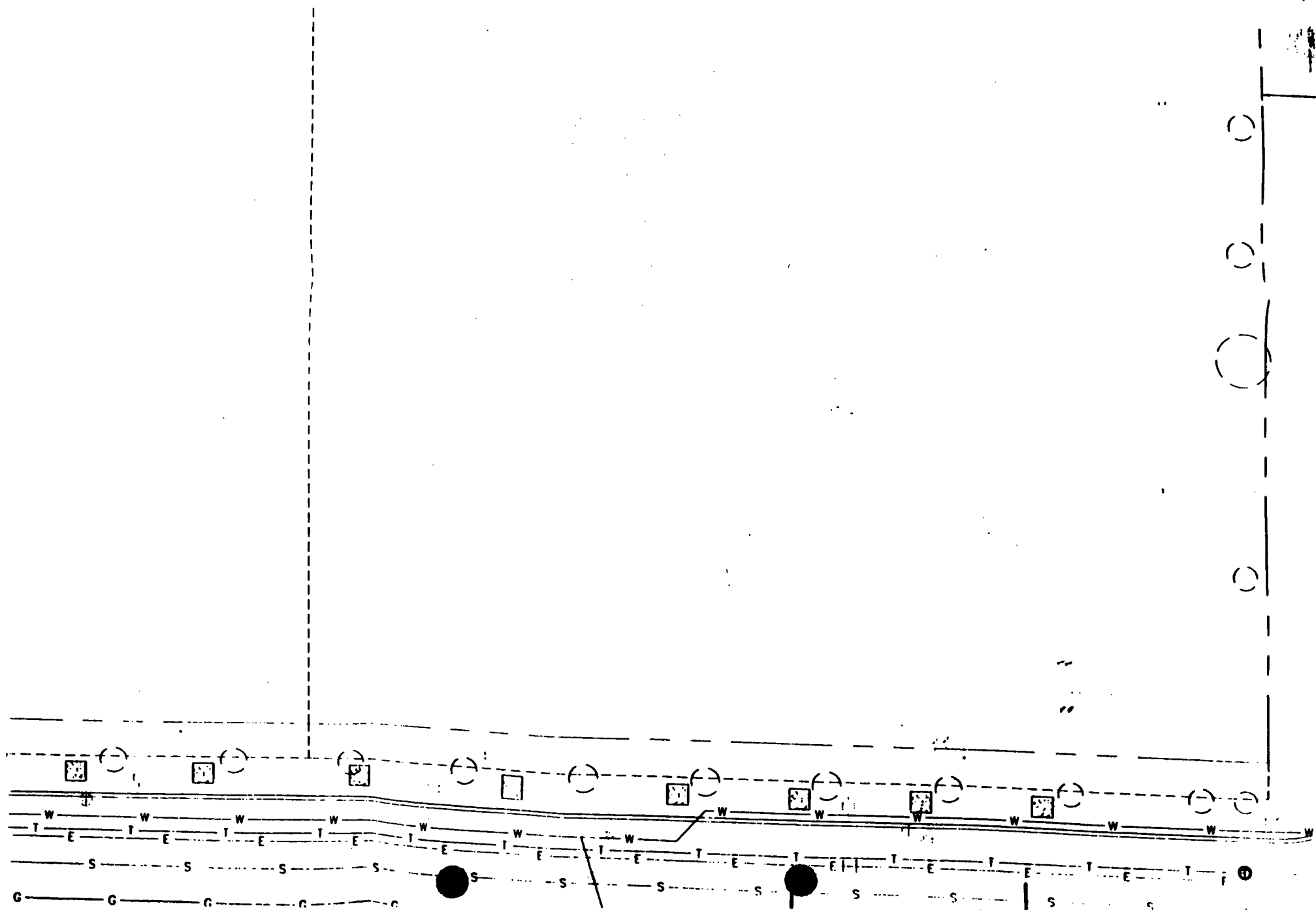
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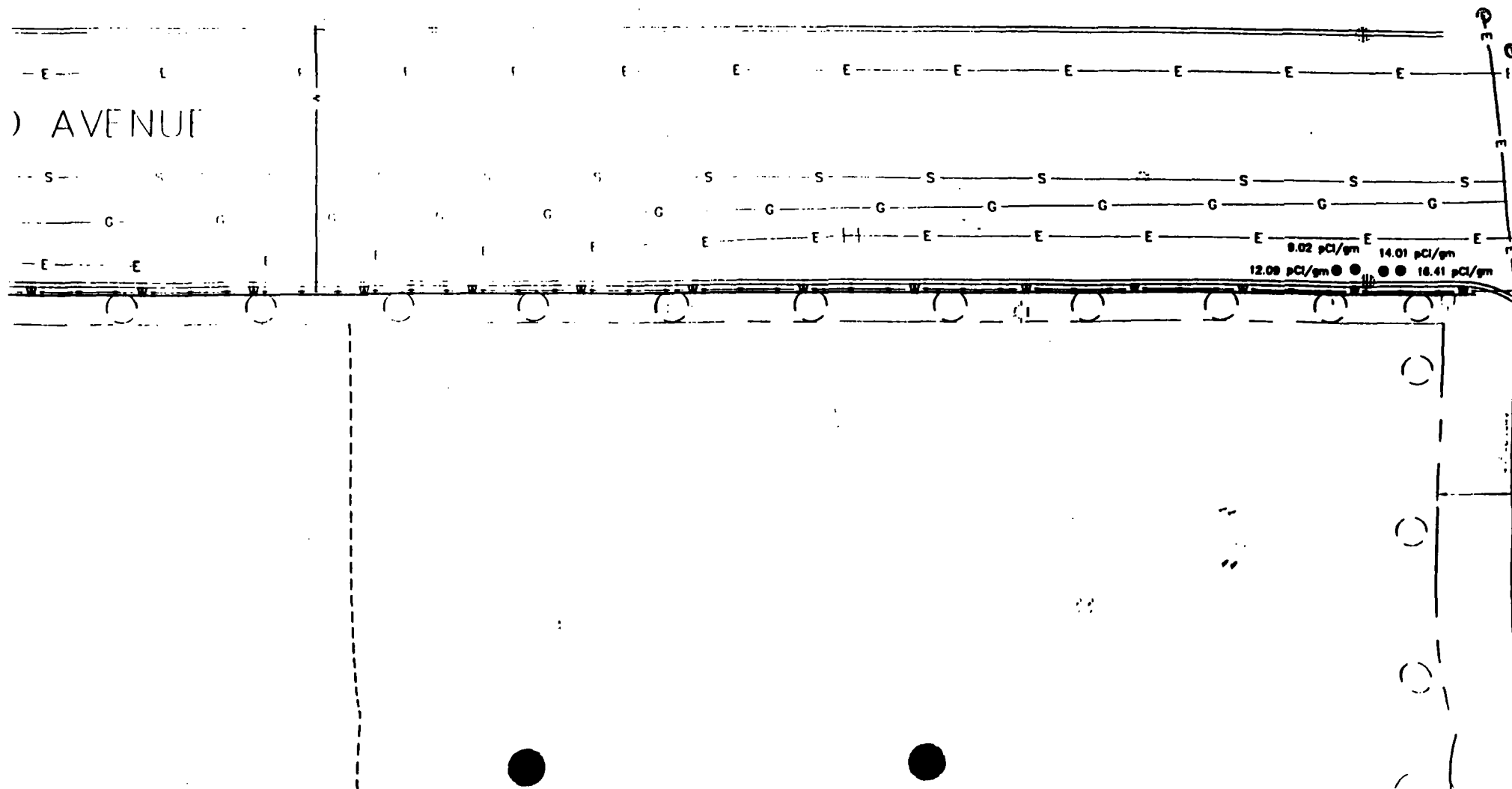
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SCALE: 1"=20'

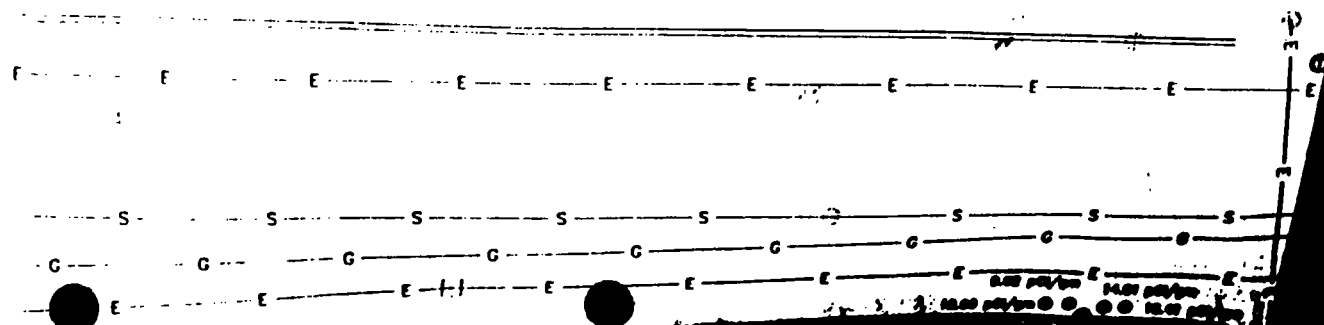


1 EXHIBIT E - (IMPACTED RIGHTS-OF-WAY)  
2 SCALE: 1"=20'





E — E  
AVENUE  
S — S  
— G — G  
E — E



**ATTACHMENT 2**

**MAP**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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STANDARD SPECIFICATIONS  
FOR  
CONCRETE  
AND  
STEEL  
REINFORCED  
CONCRETE  
WORK

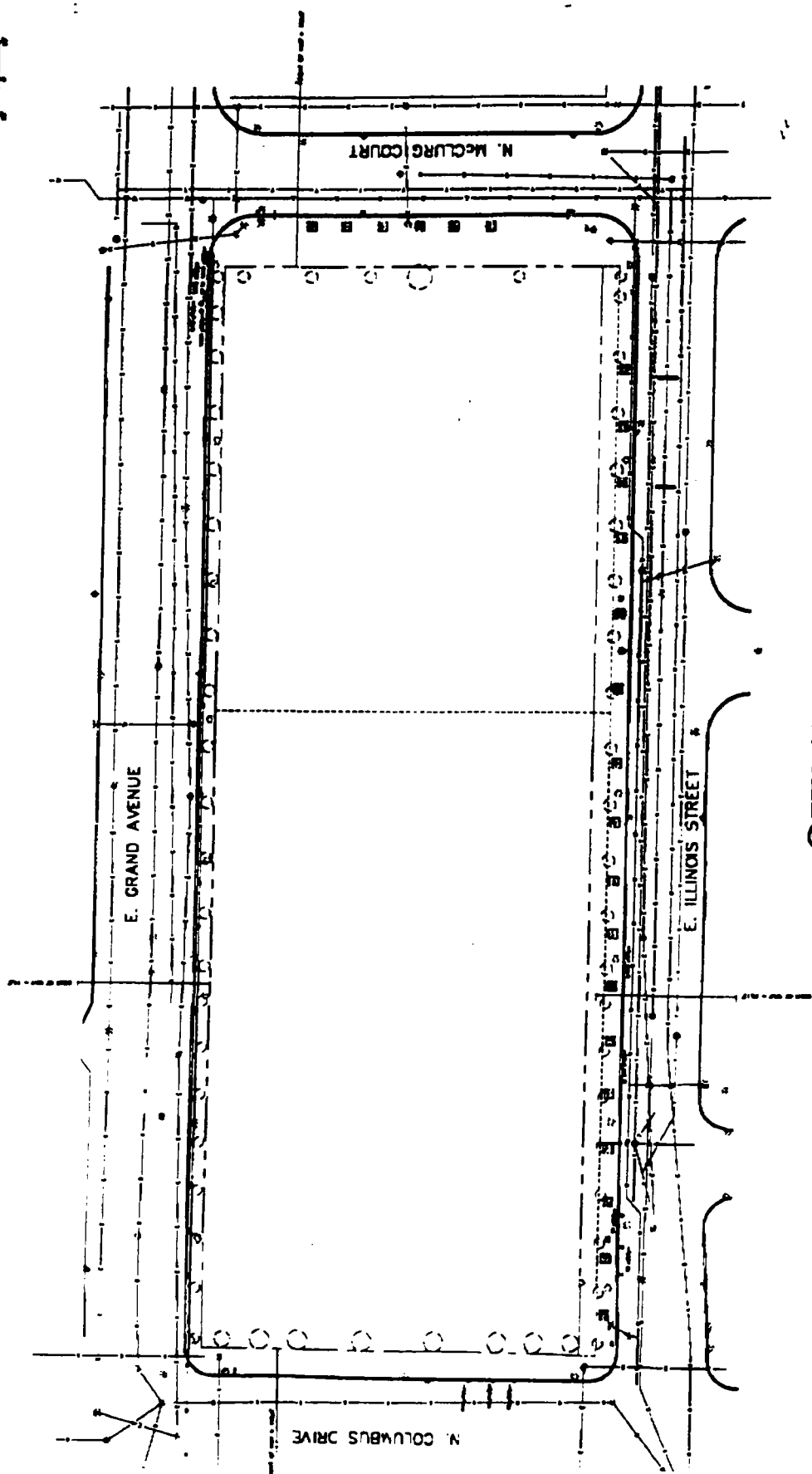


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STANDARD SPECIFICATIONS  
FOR  
CONCRETE  
AND  
STEEL  
REINFORCED  
CONCRETE  
WORK

LEGEND  
SEE PAGE 10

REINFORCED CONCRETE





**ATTACHMENT 3**

**U.S. EPA REMOVAL ACTION ADMINISTRATIVE RECORD  
For LINSAY LIGHT II, CHICAGO, ILLINOIS**

AR

## ATTACHMENT 3

U.S. ENVIRONMENTAL PROTECTION AGENCY  
REMOVAL ACTIONADMINISTRATIVE RECORD  
FOR  
LINDSAY LIGHT II SITE  
CHICAGO, ILLINOISORIGINAL  
MAY 2, 1994

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
1	06/21/93	Karl, R., U.S. EPA	Klinger, J., Illinois Dept. of Nuclear Safety	Letter re: Illinois Dept. of Nuclear Safety	1
2	08/18/93	Kouris, T., Ecology and	Pfundheller, J., U.S. EPA	Letter re: Site Assess- ment	4
3	08/26/93	TMA Eberline	Ecology and Environment, Inc.	Thermoluminescent Dosimeter Badges Data	3
4	08/27/93	Klinger, J., Illinois	Karl, R., U.S. EPA	Response to U.S. EPA Letter Dated 6/21/93	2
5	01/27/94	Muno, W., U.S. EPA	Chicago Dock & Canal Trust	Administrative Order by Consent	16
6	07/11/94	Simon, V., U.S. EPA	Muno, W., U.S. EPA	Action Memorandum	12

UPDATE #1  
SEPTEMBER 18, 1995

1	09/00/93	Rogers & Associates Engineering Corporation	Chicago Dock & Canal Trust	Work Plan for Character- ization of Radioactive Contamination, 316 East Illinois St., Chicago, Illinois: Appendix E, Supplemental; Other Sampling	17
2	10/05/95	Simon, V., U.S. EPA	Muno, W., U.S. EPA	Action Memorandum: Determination of Threat to Public Health or the Environment at the Lindsay Light II Site	22

UPDATE #2 (REVISED)  
APRIL 1, 1996

1	04/22/96	Simon, V., U.S. EPA	Muno, W., U.S. EPA	Action Memorandum: Determination of Threat to Public Health and the Environment at the Lindsay Light II Site	40
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<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
<u>UPDATE #3</u> JUNE 3, 1996					
1	-10/27/95	STS Consultants, Ltd.	U.S. EPA	The Chicago Dock & Canal Trust Report for Characterization Investigation: Gamma Radiation Survey, Lindsay Light II Site w/Attachments A-E (3 Volumes)	1331
<u>UPDATE #4</u> JUNE 24, 1996					
1	10/25/96	Klinger, S., Illinois Dept. of Nuclear Safety	Thompson, R., U.S. EPA	Letter re: Classification of Radioactive Material at Lindsay Light II	1
2	05/30/96	Weber, M., Illinois EPA	Simon, V., U.S. EPA	Letter re: Coordination of Removal Effort and Identification of Applicable or Relevant and Appropriate Requirements (ARARs) for the Lindsay Light II Site	3
3	06/04/96	Allen, R., Illinois Dept. of Nuclear Safety	Simon, V., U.S. EPA	Letter re: Identification of Applicable or Relevant and Appropriate Requirements for the Lindsay Light II Site w/Attachment (Action Criteria for Superfund Removal Actions at the Kerr-McGee Residential Areas Site, West Chicago, IL)	21
4	06/13/96	Morin, C., Illinois EPA	Simon, V., U.S. EPA	Letter re: Response to June 2 Letter Regarding ARARs for the Lindsay Light II Site w/Attachment (List of State and Federal ARARs and TCBs re: Inclusion of ARARs in the Administrative Record)	9

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
			<u>UPDATE #5</u> SEPTEMBER 22, 1999		
1	02/12/98	U.S. EPA/ OERR	U.S. EPA	OERR Directive No. 9200.4-25	5
2	00/00/00	Simon, V. & F. Micke; U.S. EPA	Muno, W., U.S. EPA	Action Memorandum Amend- ment: Determination that Specific Institutional Controls are Adequate to Abate the Threat to Public Health and the Environment from the Thorium Under the Rights-Of-Way Adjacent to the Lindsay Light II Site (PENDING)	

# ATTACHMENT - 4



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

77 WEST JACKSON BOULEVARD

CHICAGO IL 60604-3590

### MEMORANDUM

DATE:

SUBJECT: ACTION MEMORANDUM - Determination of Threat to Public Health or the Environment at the Lindsay Light II Site Chicago, Cook County, Illinois (Site Spill ID #YT)

FROM: Verneta J. Simon, On-Scene Coordinator *Verneta J. Simon*  
Emergency and Enforcement Response Branch - Section III

TO: William E. Muno, Director  
Superfund Division

#### I. PURPOSE

The purpose of this Memorandum is to document the determination of an imminent and substantial threat to public health and the environment posed by the results of a Potentially Responsible Party (PRP) lead extent of contamination study at the Lindsay Light II Site, a public parking lot located at 316 East Illinois Street in Chicago, Illinois.

Prior PRP actions were conducted pursuant to an Administrative Order by Consent (AOC) dated January 27, 1994, (please see confidential enforcement addendum) and required the following actions:

- 1) Develop and implement site health and safety plan.
- 2) Conduct land surveying to the extent necessary to locate all property boundaries and features, sample locations and areas having elevated radiation levels.
- 3) Place borings in several locations for the purpose of measuring subsurface radiation levels. Measurements shall be recorded until the natural soils are reached or radiation levels reach background, whichever is the greatest depth.
- 4) Collect soil samples from the borings and analyze for radionuclide content and RCRA characteristics. These results will then be used by the PRP to correlate subsurface radiation levels and radionuclide content.
- 5) Transport and dispose of all characterized or identified hazardous substances, pollutants, wastes or contaminants at a RCRA/CERCLA approved disposal facility in accordance with the U.S. EPA off-site rule.

This site is not on the National Priorities List (NPL).

## **II. SITE CONDITIONS AND BACKGROUND**

CERCLIS ID # ILD 0000002212

Please refer to the previous Action Memorandum dated July 11, 1994 for a description of site conditions and background location.

Activities completed at this site, besides the extent of contamination study, have been the PRP (Chicago Dock and Canal Trust) voluntarily placed notices at the entrance to the parking lot informing patrons of the risks associated with the lot. The PRP also appears to have successfully encouraged another company, Kerr-McGee, to participate in site remediation. On September 8, 1995, U.S. EPA, Chicago Dock and Canal Trust, and Kerr-McGee met to discuss the framework of future site remediation including the drafting of either an AOC or Unilateral Administrative Order (UAO) to implement remediation work by the PRPs.

## **III. THREAT TO PUBLIC HEALTH OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES**

Please refer to Section III of the attached Action Memorandum dated July 11, 1994.

## **IV. ENDANGERMENT DETERMINATION**

Please refer to Section IV of the attached Action Memorandum dated July 11, 1994.

## **V. PROPOSED ACTIONS AND ESTIMATED COSTS**

Pursuant to the AOC or UAO, the PRP will fully remediate the site until maximum protectiveness of the human health and the environment is achieved. This will involve at a minimum the following actions.

- 1) Develop and implement site health and safety plan.
- 2) Conduct off-site radiological surveying and sampling as necessary and, at a minimum implement 40 CFR 192 if deemed necessary should extensive contamination be discovered beyond current site boundaries.
- 3) Transport and dispose of all characterized or identified hazardous substances, pollutants, wastes or contaminants at a RCRA/CERCLA approved disposal facility in accordance with the U.S. EPA off-site rule.

The OSC has begun planning for the provision of post-removal site control, consistent with the provisions of Section 300.415(k) of the NCP. However, the nature of future response actions should

eliminate all exposure threats, which should minimize the need for post-removal site control.

The response actions described in this memorandum directly address actual or threatened releases of hazardous substances, pollutants or contaminants at the facility which may pose an imminent and substantial endangerment to public health and safety, and to the environment. These response actions do not impose a burden on the affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

#### Applicable or Relevant and Appropriate Requirements (ARARS)

All applicable or relevant and appropriate requirements (ARARS) of Federal law will be complied with to the extent practicable. A letter was sent on August 25, 1995, by Kerr-McGee to the Illinois Department of Nuclear Safety (IDNS) requesting that the IDNS change the waste designation from this site to 11(e)2 "by-product" material and this request is contained in Attachment 1. Correspondence dated August 27, 1993 from the IDNS stated waste from this site should be called "source" material. Once Kerr-McGee receives a response from the IDNS, the waste designation issue should be finally resolved and incorporated into the remediation of this site.

In accordance with the revised NCP, Section 300.825(a)(1), the response from the State to the request for ARARS will be added to the administrative record for this site once the response has been received and evaluated.

#### **VI. CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED**

Please refer to Section VI of the attached Action Memorandum dated July 11, 1994.

#### **VII. OUTSTANDING POLICY ISSUES**

None.

#### **IX. ENFORCEMENT**

For administrative purposes, information concerning confidential enforcement strategy for this site is contained in the Enforcement Confidential Addendum.

**X. RECOMMENDATION**

This decision document represents the selected removal action for the Lindsay Light II site, in Chicago, Illinois, developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based upon the Administrative Record for this site. Conditions at the site meet the NCP Section 300.415(b)(2) criteria for a removal action.

APPROVE:

  
\_\_\_\_\_  
DIRECTOR, SUPERFUND DIVISION

10/5/95

DISAPPROVE:

\_\_\_\_\_  
DIRECTOR, SUPERFUND DIVISION



Attachments: Enforcement Confidential Addendum

1. Letter Dated August 25, 1995 from Kerr-McGee to the Illinois Department of Nuclear Safety (without enclosures)
2. Action Memorandum dated July 11, 1994
3. Index to the Administrative Record

cc: Terri Johnson, OS-210

Don Henne, U.S. Department of the Interior  
Office of Environmental Policy and Compliance  
U.S. Custom House, Room 217  
200 Chestnut Street  
Philadelphia, PA 19106

Gary King, IEPA Superfund Coordinator

U.S. ENVIRONMENTAL PROTECTION AGENCY  
REMOVAL ACTION

ADMINISTRATIVE RECORD  
FOR  
LINDSAY LIGHT II SITE  
CHICAGO, ILLINOIS

ORIGINAL  
May 2, 1994

<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
06/21/93	Karl, R., U.S. EPA	Klinger, J., Illinois Dept. of Nuclear Safety	Letter Illinois Dept. of Nuclear Safety	1
09/18/93	Kouris, T., Ecology & Environment, Inc.	Pfundheller, J., U.S.EPA	Letter re: Site Assessment	4
08/26/93	TMA Eberline	Ecology & Environment, Inc.	Thermoluminescent Dosimeter Badges Data	3
08/27/93	Klinger, J., Illinois Dept. of Nuclear Safety	Karl, R., U.S. EPA	Response to U.S. EPA Letter Dated 6/21/93	2
1/27/94	Muno, W., U.S. EPA	Chicago Dock & Canal Trust	Administrative Order by Consent	16
07/11/94	Simon, V., U.S. EPA	Muno, W., U.S. EPA	Action Memorandum	12

U.S. ENVIRONMENTAL PROTECTION AGENCY  
REMOVAL ACTION

ADMINISTRATIVE RECORD  
FOR  
LINDSAY LIGHT II  
CHICAGO, ILLINOIS

UPDATE #1  
SEPTEMBER 18, 1995

<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
09/00/93	Rogers & Associates Engineering Corporation	Chicago Dock & Canal Trust	Work Plan for Characterization of Radioactive Contamination, 316 East Illinois St., Chicago, Illinois: Appendix E, Supplemental; Other Sampling	17
10/05/95	Simon, V., U.S. EPA	Muno, W., U.S. EPA	Action Memorandum: Determination of Threat to Public Health or the Environment at the Lindsay Light II Site	22



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF

MEMORANDUM

DATE: JUL 11 1994

SUBJECT: ACTION MEMORANDUM - Determination of Threat to Public Health or the Environment at the Lindsay Light II Site Chicago, Cook County, Illinois (Site Spill ID #ZA)

FROM: Verneta J. Simon, On-Scene Coordinator *Frank Rollins*  
Emergency and Enforcement Response Branch - Section III

TO: William E. Muno, Director  
Waste Management Division

THRU: *Jodi L. Traub* Jodi L. Traub, Acting Associate Division Director  
Office of Superfund

I. PURPOSE

The purpose of this Memorandum is to document the determination of an imminent and substantial threat to public health and the environment posed by the existence of elevated gamma levels as high as 280 microRoentgen per hour (μR/hr) at the Lindsay Light II Site, a public parking lot located at 316 East Illinois Street in Chicago, Illinois.

Potentially Responsible Party (PRP) lead response actions are being taken pursuant to an Administrative Order by Consent (AOC) (please see confidential enforcement addendum). These response actions essentially require an extent of contamination study which will help determine the scope of future response actions. Currently, the parking lot is covered with asphalt and/or concrete and persons parking at this lot are not expected to be exposed long enough to be adversely affected by the gamma rays emitted. The gamma ray exposure received by parking lot attendants and any long-term area transients may pose an imminent and substantial threat to public health.

This site is not on the National Priorities List (NPL).

## II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID # ILD 0000002212

### A. Physical Location

The Lindsay Light II Site, a public parking lot, is located at 316 East Illinois Street, Chicago, Cook County, Illinois. This 3-acre Site is bounded by Grand Avenue, Illinois Street, McClurg Court and Columbus Drive and is situated in a urban area called the Gold Coast. This property is surrounded by commercial and residential buildings with a shopping mall located approximately 200 feet to the south east. The Chicago River is located 1 mile south of the Site and Lake Michigan is about 1.5 miles east of the Site. This Site has the usual metal barricades for a parking lot; however, it does not totally restrict access. It is possible to step over the barricades if you want to gain entry to the parking lot or use it as a short-cut.

### B. Site description and background

The Lindsay Light II Site was once occupied by the Lindsay Light Chemical Company, which made incandescent gas mantles for home and street lighting. Earlier reports show this company first imported and then manufactured mantles. These activities occurred from at least 1910 until 1936 at 161 East Grand, which is .25 miles from the Site. It is unclear what Lindsay Light actually did at 316 East Illinois, however, records from the Chicago Dock and Canal Trust indicate this site was a stable, and that Lindsay Light leased portions of the building from Chicago Dock and Canal Trust from 1915-1933. Sometime after 1933, Lindsay Light moved to West Chicago, Illinois and was later purchased by American Potash, who in turn, was purchased by Kerr-McGee Chemical Company.

Gas mantle manufacturing involves dipping gauze mantle bags into solutions containing thorium nitrate and small amounts of cerium, beryllium and magnesium nitrates. The principal ingredient in thorium nitrate is radioactive thorium, specifically, thorium-232. Thorium-232, which is the parent of the Thorium Decay Series, has a half-life of 14 billion years. It is believed that the principal source of contamination at this Site is the Thorium Decay Series.

### C. Current site conditions

Conditions have not changed since the site assessment on June 3, 1993. This property is still operated as a public parking lot with attendants stationed as shown on Figure 1.

### D. Other actions to date

From June 30, 1993 to July 30, 1993, two thermoluminescent dosimeter (TLD) badges were placed in the ticket booths shown in Figure 1. TLD results for these locations were as follows:

TLD #	
9035	0.00058 millirem per hour or about 1.2 millirem per year
9036	-0.00184 millirem per hour or -3.7 millirem per year
	(which means all values are effectively zero)

These results were compared to the Nuclear Regulatory Commission (NRC) regulations in the new Title 10, Part 20.1301, Code of Federal Regulations of 100 millirem per year and 2 millirem per hour for individual members of the general public. The above results did not exceed either of these relevant levels.

The City of Chicago, the Illinois Environmental Protection Agency, and the Illinois Department of Nuclear Safety are aware of site conditions and plans described in this Action Memorandum.

### III. THREAT TO PUBLIC HEALTH OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Conditions at the Lindsay Light II site may pose an imminent and substantial endangerment to public health or welfare or the environment, based upon factors set forth in the National Contingency Plan (NCP), 40 CFR 300.415 (b)(2). These factors include:

a) actual or potential exposure to nearby populations, animals, or the food chain from hazardous substances or pollutants or contaminants:

This factor is present at the site due to the existence of a public parking lot on property found to have gamma readings measured as high as 280 microRoentgen per hour (uR/hr) on a Ludlum Model 19 Micro-R meter. This reading is 14 times the background level, 20 uR/hr, measured for the site.

Gamma rays are penetrating radiation indistinguishable from X-rays which can be absorbed by tissue in the human body, thereby increasing the cancer risk for the person exposed. The excess risk to a transient spending 1 hour per day for a 250 day work year at this peak exposure spot is  $5 \times 10^{-5}$ . Transients were judged to be parking lot customers, people using the lot for a short cut or temporary workers. Such a risk is not justified by personal benefit to the transient nor by societal benefit.

The excess risk to a parking lot attendant spending an 8 hour shift for 250 days per work year at this spot is  $3 \times 10^{-4}$ . Again, such an exposure entails cancer risk that would have no personal or societal benefit. Direct measurements with survey instruments at the present parking lot attendant stations found background radiation levels and these were confirmed with longer

measurements using thermoluminescent dosimeters (TLDs). There is no guarantee these stations could not be moved to the peak point at some future time, thereby introducing the potential for exposure and risk to be actualized.

b) high levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate:

The presence of elevated gamma exposure levels at the site validates subsurface deposits of radiological contaminants. The dominant concern is intrusion into these materials that will contaminate the intruder and their equipment and, further, lead to dispersal or spreading of the contaminants from its present locations. Such a scenario probably has arisen, and could again arise, with parking lot excavation where workers and their equipment are contaminated by radioactive soils, dry soil is dispersed in the wind and excavation spoils are moved offsite. The number of people exposed could be greatly increased and might include workers, their families if contaminants are carried home, workers who subsequently use contaminated machinery, residents near the parking lot who might be subject to wind dispersed soils and users of excavation spoils. Such spreading could occur within downtown Chicago where the parking lot is located and out for several miles depending upon where workers reside and where spoils are used. This is a plausible scenario since recent plans were to build a large hospital building on this site.

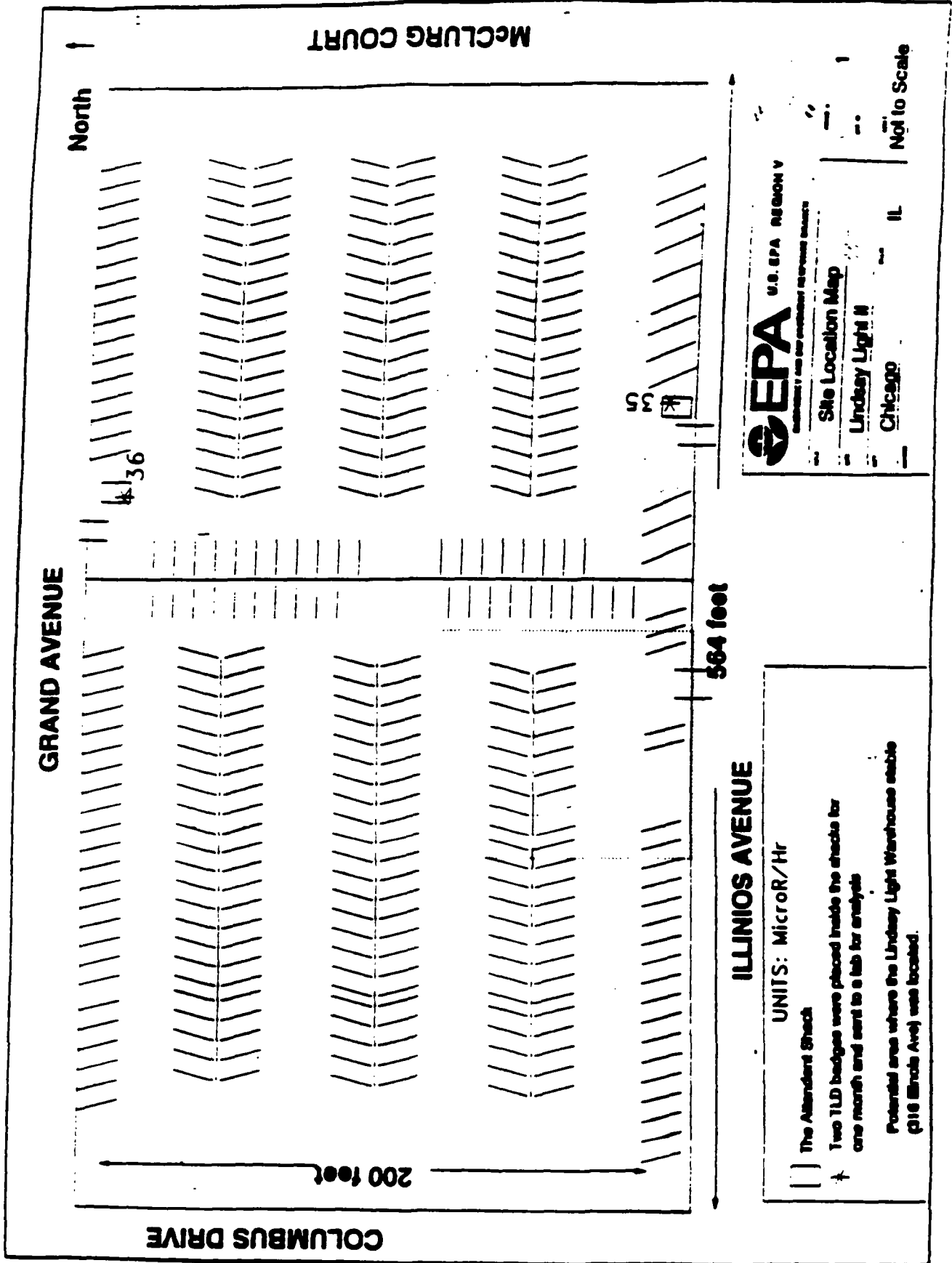
c) other situations or factors which may pose threats to public health or welfare or the environment

This factor is present at the Site due to the property's potential for future development. Such construction might entail excavating into potential contaminated soils for placement of building footings and cause increased releases into the environment and human exposure to contaminants. Also, it has not been determined whether subsurface contaminants are soluble. If they are there could be spreading via groundwater.

This site appears to be gridded with sewer lines. These could be conduits for the spread of both soluble and insoluble materials offsite, for extension of the region of contamination and for an increase in the potential for workers (sewer workers) to be exposed.

#### **IV. ENDANGERMENT DETERMINATION**

Given the nature of the Site, with unrestricted access to contaminants, the nature of these contaminants - gamma rays, which can not be stopped but attenuated; and an exposure pathway of direct contact, as described in Section II and III, the actual or threatened releases of hazardous substances from this Site, if



**EPA** U.S. EPA REGION V  
ENVIRONMENT AND NATURAL RESOURCES SERVICE

Site Location Map

Lindsey Light II

Chicago IL

Not to Scale

UNITS: MicroR/Hr

The Allegiant Street

Two TLD badges were placed inside the streets for one month and sent to a lab for analysis

Potential area where the Lindsey Light Warehouse stable (318 Illinois Ave) was located.



not addressed by implementing the response action described in this Action Memorandum, may pose an imminent and substantial endangerment to public health, or welfare, or the environment due to the exposure to gamma rays, of parking lot attendants and/or site transients, which are above U.S. EPA's acceptable excess carcinogenic risk of  $1 \times 10^{-4}$ .

#### **V. PROPOSED ACTIONS AND ESTIMATED COSTS**

Pursuant to the AOC, the PRP intends to undertake the following actions to determine the extent of the contamination of the Site:

- 1) Develop and implement site health and safety plan.
- 2) Conduct land surveying to the extent necessary to locate all property boundaries and features, sample locations and areas having elevated radiation levels.
- 3) Place borings in several locations for the purpose of measuring subsurface radiation levels. Measurements shall be recorded until the natural soils are reached or radiation levels reach background, whichever is the greatest depth.
- 4) Collect soil samples from the borings and analyze for radionuclide content and RCRA characteristics. These results will then be used by the PRP to correlate subsurface radiation levels and radionuclide content.
- 5) Transport and dispose of all characterized or identified hazardous substances, pollutants, wastes or contaminants at a RCRA/CERCLA approved disposal facility in accordance with the U.S. EPA off-site rule.

The OSC has begun planning for the provision of post-removal site control, consistent with the provisions of Section 300.415(k) of the NCP. However, the nature of future response actions should eliminate all exposure threats, which should minimize the need for post-removal site control.

The response actions described in this memorandum directly address actual or threatened releases of hazardous substances, pollutants or contaminants at the facility which may pose an imminent and substantial endangerment to public health and safety, and to the environment. These response actions do not impose a burden on the affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

#### **Applicable or Relevant and Appropriate Requirements (ARARS)**

All applicable or relevant and appropriate requirements (ARARS) of

Federal law will be complied with to the extent practicable. A letter was sent to the Illinois Department of Nuclear Safety on June 21, 1993, requesting clarification on the waste designation any radiological material would be called. Their response was to classify waste from this site as "source" material and is contained in Attachment 1. Conversations held with representatives of the Illinois Environmental Protection Agency were that it was not necessary to send an ARARs letter to them since radiological matters are handled by the Illinois Department of Nuclear Safety, however, if it appears that any other issues occur during this action which are non-radiological an ARARs letter will be sent.

In accordance with the revised NCP, Section 300.825(a)(1), the response from the State to the request for ARARs will be added to the administrative record for this site once the response has been received and evaluated.

#### **VI. CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED**

Delayed or non-action may result in increased likelihood of direct contact threat to human populations accessing and working on the Site. Also, since there is no threshold for cancer, the continual exposure to gamma rays will increase the cancer risk.

#### **VII. OUTSTANDING POLICY ISSUES**

None.

#### **IX. ENFORCEMENT**

For administrative purposes, information concerning confidential enforcement strategy for this site is contained in the Enforcement Confidential Addendum.

#### **X. RECOMMENDATION**

This decision document represents the selected removal action for the Lindsay Light II site, in Chicago, Illinois, developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based upon the Administrative Record for this site. Conditions at the site meet the NCP Section 300.415(b)(2) criteria for a removal action.

APPROVE:

Wm. E. Munn 7/11/94  
DIRECTOR, WASTE MANAGEMENT DIVISION

DISAPPROVE:

\_\_\_\_\_  
DIRECTOR, WASTE MANAGEMENT DIVISION

Attachments: Enforcement Confidential Addendum  
1. IDNS Letter Dated August 27, 1993  
2. Index to the Administrative Record

cc: Terri Johnson, OS-210

Don Henne, U.S. Department of the Interior  
Office of Environmental Policy and Compliance  
U.S. Custom House, Room 217  
200 Chestnut Street  
Philadelphia, PA 19106

Gary King, IEPA Superfund Coordinator

ATTACHMENT 1

STATE OF ILLINOIS  
DEPARTMENT OF NUCLEAR SAFETY  
1030 OLIVER PARK DRIVE  
SPRINGFIELD, ILLINOIS 62704

Jim Edgar  
Governor

Thomas W. Ottenger  
Director

August 27, 1993

Mr. Rick Karl, Acting Chief  
Emergency and Enforcement Response Branch  
United States Environmental Protection Agency  
Region 5  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3890

Dear Mr. Karl:


This is in response to your June 21, 1993, request for assistance regarding classification of radioactive contamination at two locations in Chicago and one West Chicago location. We have reviewed all available information concerning these locations and make the following recommendations:

1. 316 East Illinois St., Chicago - Radioactive material at this location should be classified as "source" material. This location was apparently a warehouse facility used in conjunction with the Lindsay Light Chicago gas mantle manufacturing operation.
2. 161 East Grand, Chicago - Radioactive material at this location should be classified as "source" material. This location apparently housed the corporate offices for Lindsay Light and was the manufacturing operation for the gas mantles. However, there is no substantive information that indicates that thorium was actually extracted from ore at this location. Lindsay Light produced thorium nitrate and used it for the gas mantle manufacturing operation, and, in fact, exported thorium nitrate during the period in question. The exact location where the thorium nitrate was produced is unknown. Therefore, the contamination associated with this property must be assumed to be associated with the manufacturing of gas mantles and should be classified as "source" material.
3. 185 West Washington, West Chicago - Our information indicates that this location was used as a laboratory facility in support of Kerr-McGee activities at their West Chicago site. Since all of the contamination associated with the Kerr-McGee West Chicago operations have been determined to be "Byproduct material", the contamination at this location should be classified as "Byproduct Material" as defined in 32 Ill. Adm. Code 332.23.

Mr. Rick Karl  
August 27, 1993  
Page 2

Please note that the above is based on a careful review of very limited information. If we obtain additional information that alters the above recommendations, we will inform you promptly. We hope this information is helpful and if we can be of additional assistance please contact us.

Sincerely,

  
Joseph G. Klinger,  
Head of Licensing  
Division of Radioactive Materials

JGK:ren



R.M. CHIN &amp; ASSOCIATES, INC.

401 N. Michigan Avenue • Chicago, Illinois 60611

March 23, 2000

Ms. Verneta J. Simon, PE  
U.S. Environmental Protection Agency  
77 W. Jackson Boulevard (SE-5J)  
Chicago, IL 60604

Via Fax & Mail

Re: Grand Pier Center  
Chicago, IL  
(ECD/GPC/2250.13)

Dear Ms. Simon:

Listed below is a summary of the information you requested at the Wednesday, March 15, 2000 meeting:

**Health Screening**

- The Health Screening for individuals has been set-up with Northwestern Memorial Hospital during the week of March 27, 2000.

**HAZWOPER Training**

- Training is to be conducted from March 27, 2000 through March 31, 2000 by Aires Consulting Group, Inc., and held at The Equitable Building, 401 N. Michigan.

**Site Specific Training**

- STS, RSSI, and Kerr-McGee will be conducting the training on April 3, 2000.

With the above, Grand Pier Center, L.L.C. is expecting to start up with the field work on April 4, 2000, including the work within Illinois Street.

I appreciate your cooperation and, should you have any questions, please feel free to contact Richard Berggreen or myself.

Sincerely,

R.M. Chin &amp; Associates, Inc.

Michael J. Witte  
Senior Vice President

cc: R. Chin, B. Lorenc, E. Fulton, R. Berggreen (STS), J. Hayhurst (MDI)  
J:DGILLI-1VCORRESP02250.13032300VS.VPD

# ATTACHMENT - 5



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF

## MEMORANDUM

DATE: JUL 11 1994

SUBJECT: ACTION MEMORANDUM - Determination of Threat to Public Health or the Environment at the Lindsay Light II Site Chicago, Cook County, Illinois (Site Spill ID #ZA)

FROM: Verneta J. Simon, On-Scene Coordinator *Frank Rollins*  
Emergency and Enforcement Response Branch - Section III

TO: William E. Muno, Director  
Waste Management Division

THRU: *Jodi L. Traub* Jodi L. Traub, Acting Associate Division Director  
Office of Superfund

### I. PURPOSE

The purpose of this Memorandum is to document the determination of an imminent and substantial threat to public health and the environment posed by the existence of elevated gamma levels as high as 280 microRoentgen per hour (μR/hr) at the Lindsay Light II Site, a public parking lot located at 316 East Illinois Street in Chicago, Illinois.

Potentially Responsible Party (PRP) lead response actions are being taken pursuant to an Administrative Order by Consent (AOC) (please see confidential enforcement addendum). These response actions essentially require an extent of contamination study which will help determine the scope of future response actions. Currently, the parking lot is covered with asphalt and/or concrete and persons parking at this lot are not expected to be exposed long enough to be adversely affected by the gamma rays emitted. The gamma ray exposure received by parking lot attendants and any long-term area transients may pose an imminent and substantial threat to public health.

This site is not on the National Priorities List (NPL).

## II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID # ILD 0000002212

### A. Physical Location

The Lindsay Light II Site, a public parking lot, is located at 316 East Illinois Street, Chicago, Cook County, Illinois. This 3-acre Site is bounded by Grand Avenue, Illinois Street, McClurg Court and Columbus Drive and is situated in a urban area called the Gold Coast. This property is surrounded by commercial and residential buildings with a shopping mall located approximately 200 feet to the south east. The Chicago River is located 1 mile south of the Site and Lake Michigan is about 1.5 miles east of the Site. This Site has the usual metal barricades for a parking lot; however, it does not totally restrict access. It is possible to step over the barricades if you want to gain entry to the parking lot or use it as a short-cut.

### B. Site description and background

The Lindsay Light II Site was once occupied by the Lindsay Light Chemical Company, which made incandescent gas mantles for home and street lighting. Earlier reports show this company first imported and then manufactured mantles. These activities occurred from at least 1910 until 1936 at 161 East Grand, which is .25 miles from the Site. It is unclear what Lindsay Light actually did at 316 East Illinois, however, records from the Chicago Dock and Canal Trust indicate this site was a stable, and that Lindsay Light leased portions of the building from Chicago Dock and Canal Trust from 1915-1933. Sometime after 1933, Lindsay Light moved to West Chicago, Illinois and was later purchased by American Potash, who in turn, was purchased by Kerr-McGee Chemical Company.

Gas mantle manufacturing involves dipping gauze mantle bags into solutions containing thorium nitrate and small amounts of cerium, beryllium and magnesium nitrates. The principal ingredient in thorium nitrate is radioactive thorium, specifically, thorium-232. Thorium-232, which is the parent of the Thorium Decay Series, has a half-life of 14 billion years. It is believed that the principal source of contamination at this Site is the Thorium Decay Series.

### C. Current site conditions

Conditions have not changed since the site assessment on June 3, 1993. This property is still operated as a public parking lot with attendants stationed as shown on Figure 1.

### D. Other actions to date



From June 30, 1993 to July 30, 1993, two thermoluminescent dosimeter (TLD) badges were placed in the ticket booths shown in Figure 1. TLD results for these locations were as follows:

TLD #	
9035	0.00058 millirem per hour or about 1.2 millirem per year
9036	-0.00184 millirem per hour or -3.7 millirem per year
	(which means all values are effectively zero)

These results were compared to the Nuclear Regulatory Commission (NRC) regulations in the new Title 10, Part 20.1301, Code of Federal Regulations of 100 millirem per year and 2 millirem per hour for individual members of the general public. The above results did not exceed either of these relevant levels.

The City of Chicago, the Illinois Environmental Protection Agency, and the Illinois Department of Nuclear Safety are aware of site conditions and plans described in this Action Memorandum.

### III. THREAT TO PUBLIC HEALTH OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Conditions at the Lindsay Light II site may pose an imminent and substantial endangerment to public health or welfare or the environment, based upon factors set forth in the National Contingency Plan (NCP), 40 CFR 300.415 (b)(2). These factors include:

a) actual or potential exposure to nearby populations, animals, or the food chain from hazardous substances or pollutants or contaminants:

This factor is present at the site due to the existence of a public parking lot on property found to have gamma readings measured as high as 280 microRoentgen per hour (uR/hr) on a Ludlum Model 19 Micro-R meter. This reading is 14 times the background level, 20 uR/hr, measured for the site.

Gamma rays are penetrating radiation indistinguishable from X-rays which can be absorbed by tissue in the human body, thereby increasing the cancer risk for the person exposed. The excess risk to a transient spending 1 hour per day for a 250 day work year at this peak exposure spot is  $5 \times 10^{-5}$ . Transients were judged to be parking lot customers, people using the lot for a short cut or temporary workers. Such a risk is not justified by personal benefit to the transient nor by societal benefit.

The excess risk to a parking lot attendant spending an 8 hour shift for 250 days per work year at this spot is  $3 \times 10^{-4}$ . Again, such an exposure entails cancer risk that would have no personal or societal benefit. Direct measurements with survey instruments at the present parking lot attendant stations found background radiation levels and these were confirmed with longer

measurements using thermoluminescent dosimeters (TLDs). There is no guarantee these stations could not be moved to the peak point at some future time, thereby introducing the potential for exposure and risk to be actualized.

b) high levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate:

The presence of elevated gamma exposure levels at the site validates subsurface deposits of radiological contaminants. The dominant concern is intrusion into these materials that will contaminate the intruder and their equipment and, further, lead to dispersal or spreading of the contaminants from its present locations. Such a scenario probably has arisen, and could again arise, with parking lot excavation where workers and their equipment are contaminated by radioactive soils, dry soil is dispersed in the wind and excavation spoils are moved offsite. The number of people exposed could be greatly increased and might include workers, their families if contaminants are carried home, workers who subsequently use contaminated machinery, residents near the parking lot who might be subject to wind dispersed soils and users of excavation spoils. Such spreading could occur within downtown Chicago where the parking lot is located and out for several miles depending upon where workers reside and where spoils are used. This is a plausible scenario since recent plans were to build a large hospital building on this site.

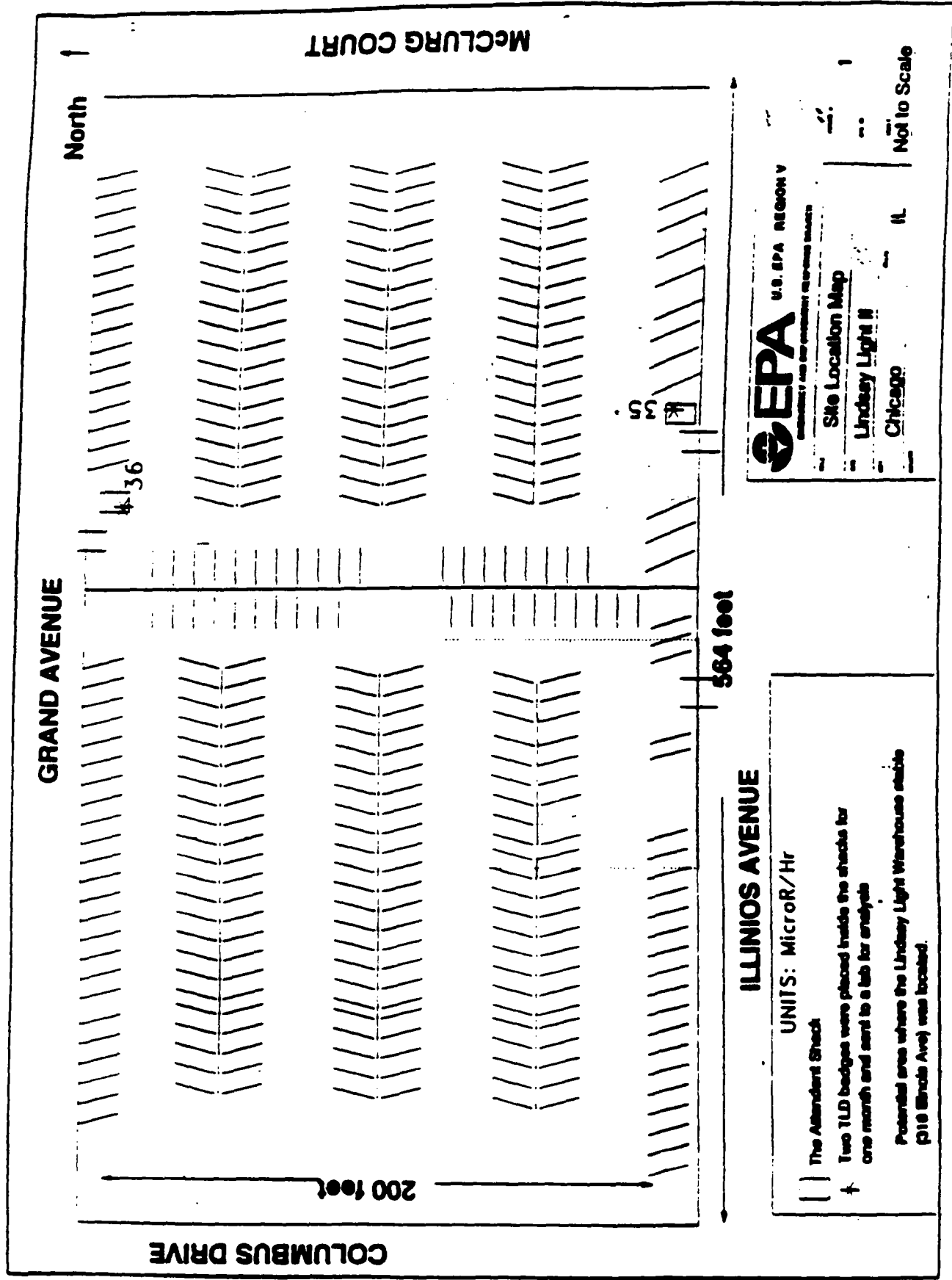
c) other situations or factors which may pose threats to public health or welfare or the environment

This factor is present at the Site due to the property's potential for future development. Such construction might entail excavating into potential contaminated soils for placement of building footings and cause increased releases into the environment and human exposure to contaminants. Also, it has not been determined whether subsurface contaminants are soluble. If they are there could be spreading via groundwater.

This site appears to be gridded with sewer lines. These could be conduits for the spread of both soluble and insoluble materials offsite, for extension of the region of contamination and for an increase in the potential for workers (sewer workers) to be exposed.

#### **IV. ENDANGERMENT DETERMINATION**

Given the nature of the Site, with unrestricted access to contaminants, the nature of these contaminants - gamma rays, which can not be stopped but attenuated; and an exposure pathway of direct contact, as described in Section II and III, the actual or threatened releases of hazardous substances from this Site, if



not addressed by implementing the response action described in this Action Memorandum, may pose an imminent and substantial endangerment to public health, or welfare, or the environment due to the exposure to gamma rays, of parking lot attendants and/or site transients, which are above U.S. EPA's acceptable excess carcinogenic risk of  $1 \times 10^{-6}$ .

#### **V. PROPOSED ACTIONS AND ESTIMATED COSTS**

Pursuant to the AOC, the PRP intends to undertake the following actions to determine the extent of the contamination of the Site:

- 1) Develop and implement site health and safety plan.
- 2) Conduct land surveying to the extent necessary to locate all property boundaries and features, sample locations and areas having elevated radiation levels.
- 3) Place borings in several locations for the purpose of measuring subsurface radiation levels. Measurements shall be recorded until the natural soils are reached or radiation levels reach background, whichever is the greatest depth.
- 4) Collect soil samples from the borings and analyze for radionuclide content and RCRA characteristics. These results will then be used by the PRP to correlate subsurface radiation levels and radionuclide content.
- 5) Transport and dispose of all characterized or identified hazardous substances, pollutants, wastes or contaminants at a RCRA/CERCLA approved disposal facility in accordance with the U.S. EPA off-site rule.

The OSC has begun planning for the provision of post-removal site control, consistent with the provisions of Section 300.415(k) of the NCP. However, the nature of future response actions should eliminate all exposure threats, which should minimize the need for post-removal site control.

The response actions described in this memorandum directly address actual or threatened releases of hazardous substances, pollutants or contaminants at the facility which may pose an imminent and substantial endangerment to public health and safety, and to the environment. These response actions do not impose a burden on the affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

#### **Applicable or Relevant and Appropriate Requirements (ARARS)**

All applicable or relevant and appropriate requirements (ARARS) of

Federal law will be complied with to the extent practicable. A letter was sent to the Illinois Department of Nuclear Safety on June 21, 1993, requesting clarification on the waste designation any radiological material would be called. Their response was to classify waste from this site as "source" material and is contained in Attachment 1. Conversations held with representatives of the Illinois Environmental Protection Agency were that it was not necessary to send an ARARs letter to them since radiological matters are handled by the Illinois Department of Nuclear Safety, however, if it appears that any other issues occur during this action which are non-radiological an ARARs letter will be sent.

In accordance with the revised NCP, Section 300.825(a)(1), the response from the State to the request for ARARs will be added to the administrative record for this site once the response has been received and evaluated.

#### VI. CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED

Delayed or non-action may result in increased likelihood of direct contact threat to human populations accessing and working on the Site. Also, since there is no threshold for cancer, the continual exposure to gamma rays will increase the cancer risk.

#### VII. OUTSTANDING POLICY ISSUES

None.

#### IX. ENFORCEMENT

For administrative purposes, information concerning confidential enforcement strategy for this site is contained in the Enforcement Confidential Addendum.

#### X. RECOMMENDATION

This decision document represents the selected removal action for the Lindsay Light II site, in Chicago, Illinois, developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based upon the Administrative Record for this site. Conditions at the site meet the NCP Section 300.415(b)(2) criteria for a removal action.

APPROVE:

Wm. E. Munn 7/11/94  
DIRECTOR, WASTE MANAGEMENT DIVISION

DISAPPROVE:

\_\_\_\_\_  
DIRECTOR, WASTE MANAGEMENT DIVISION

**Attachments: Enforcement Confidential Addendum**

1. IDHS Letter Dated August 27, 1993
2. Index to the Administrative Record

cc: Terri Johnson, OS-210

Don Henne, U.S. Department of the Interior  
Office of Environmental Policy and Compliance  
U.S. Custom House, Room 217  
200 Chestnut Street  
Philadelphia, PA 19106

Gary King, IEPA Superfund Coordinator

## Three Attachments

1. Action Memorandum dated July 11, 1994
2. Action Memorandum dated October 5, 1995
3. Index to the Administrative Record

cc: E. Watkins, U.S. EPA HQ, 5202G  
D. Henne, U.S. Department of Interior  
G. King, IEPA Superfund Coordinator  
J. Klinger/T.Runyon, Illinois Department of Nuclear Safety  
L. Robinson, City of Chicago

**LINDSAY LIGHT II SITE  
Chicago, Illinois  
Administrative Record - Update #7**

**BCC Page  
1 - Page**

**REDACTED**

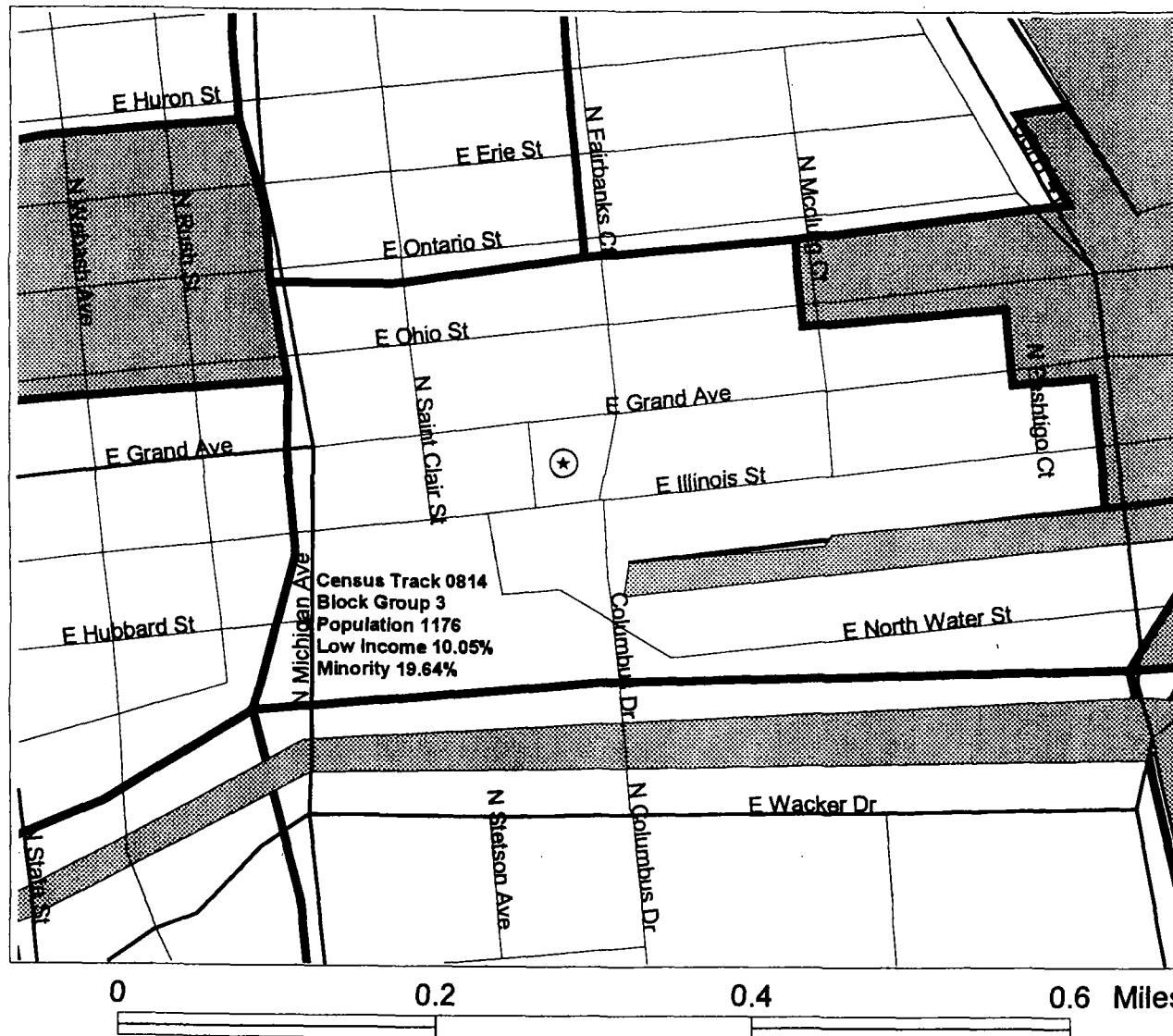
**NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION**



# Region 5 Superfund EJ Analysis

## Lindsay Light II Site / (RV3 North Columbus Drive)

### Chicago, IL



#### EJ Identification

- Low Income and Minority Less than State Average
- Low Income or Minority at or Greater than State Average
- Low Income or Minority 2 Times or Greater than State Average  
 [ meets Region 5 EJ Case criteria ]

⊙ Site Location

— Block Group Boundary

Region 5 EJ Case Criteria for Illinois

Minority: 50% or greater

Low Income: 54% or greater



ATTACHMENT - 6



Date of Map: 03/20/00

Source of Map: 1990 Census Database

# ATTACHMENT - 7

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## ATTACHMENT 7

### U.S. ENVIRONMENTAL PROTECTION AGENCY REMOVAL ACTION

#### ADMINISTRATIVE RECORD FOR LINDSAY LIGHT II SITE CHICAGO, ILLINOIS

ORIGINAL  
MAY 2, 1994

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
1	06/21/93	Karl, R., U.S. EPA	Klinger, J., Illinois Dept. of Nuclear Safety	Letter re: Illinois Dept. of Nuclear Safety	1
2	08/18/93	Kouris, T., Ecology and	Pfundheller, J., U.S. EPA	Letter re: Site Assess- ment	4
3	08/26/93	TMA Eberline	Ecology and Environment, Inc.	Thermoluminescent Dosimeter Badges Data	3
4	08/27/93	Klinger, J., Illinois	Karl, R., U.S. EPA	Response to U.S. EPA Letter Dated 6/21/93	2
5	01/27/94	Muno, W., U.S. EPA	Chicago Dock & Canal Trust	Administrative Order by Consent	16
6	07/11/94	Simon, V., U.S. EPA	Muno, W., U.S. EPA	Action Memorandum	12

#### UPDATE #1 SEPTEMBER 18, 1995

1	09/00/93	Rogers & Associates Engineering Corporation	Chicago Dock & Canal Trust	Work Plan for Character- ization of Radioactive Contamination, 316 East Illinois St., Chicago, Illinois: Appendix E, Supplemental; Other Sampling	17
2	10/05/95	Simon, V., U.S. EPA	Muno, W., U.S. EPA	Action Memorandum: Determination of Threat to Public Health or the Environment at the Lindsay Light II Site	22

#### UPDATE #2 (REVISED) APRIL 1, 1996

1	04/22/96	Simon, V., U.S. EPA	Muno, W., U.S. EPA	Action Memorandum: Determination of Threat to Public Health and the Environment at the Lindsay Light II Site	40
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<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
<u>UPDATE #3</u> JUNE 3, 1996					
1	10/27/95	STS Consultants, Ltd.	U.S. EPA	The Chicago Dock & Canal Trust Report for Characterization Inves- tigation: Gamma Radiation Survey, Lindsay Light II Site w/Attachments A-E (3 Volumes)	1331
<u>UPDATE #4</u> JUNE 24, 1996					
1	10/25/96	Klinger, S., Illinois Dept. of Nuclear Safety	Thompson, R., U.S. EPA	Letter re: Classification of Radioactive Material at Lindsay Light II	1
2	05/30/96	Weber, M., Illinois EPA	Simon, V., U.S. EPA	Letter re: Coordination of Removal Effort and Identification of Appli- cable or Relevant and Appropriate Requirements (ARARs) for the Lindsay Light II Site	3
3	06/04/96	Allen, R., Illinois Dept. of Nuclear Safety	Simon, V., U.S. EPA	Letter re: Identification of Applicable or Relevant and Appropriate Require- ments for the Lindsay Light II Site w/Attachment (Action Criteria for Superfund Removal Actions at the Kerr-McGee Resi- dential Areas Site, West Chicago, IL)	21
4	06/13/96	Morin, C., Illinois EPA	Simon, V., U.S. EPA	Letter re: Response to June 2 Letter Regarding ARARs for the Lindsay Light II Site w/Attach- ment (List of State and Federal ARARs and TCBs re: Inclusion of ARARs in the Administrative Record)	9

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
<b><u>UPDATE #5</u></b> <b>SEPTEMBER 22, 1999</b>					
1	02/12/98	U.S. EPA/ OERR	U.S. EPA	Memo re: Use of Soil Cleanup Criteria in 40 CFR Part 192 as Remediation Goals for CERCLA sites (OERR Directive No. 9200.4-25)	6
2	09/22/99	Simon, V. & F. Micke; U.S. EPA	Muno, W., U.S. EPA	Action Memorandum Amendment: Determination that Specific Institutional Controls are Adequate to Abate the Threat to Public Health and the Environment from the Thorium Under the Rights-Of-Way Adjacent to the Lindsay Light II Site (PORTIONS OF THIS DOCUMENT HAVE BEEN REDACTED)	53
<b><u>UPDATE #6</u></b> <b>OCTOBER 18, 1999</b>					
1	09/27/99	City of Chicago	U.S. EPA	Residual Radioactive Waste Right-of-Way Agreement w/Attachments A-F	103
<b><u>UPDATE #7</u></b> <b>LINDSAY LIGHT II (RV3 NORTH COLUMBUS DRIVE) SITE</b> <b>MARCH 24, 2000</b>					
1	06/21/93	Simon, V., U.S. EPA	Steele, R., 161 E. Grand Associates	Letter re: U.S. EPA/IDNS Verification of Radioactivity at the 161 E. Grand Building and Request to Install Thermoluminescent Dosimeter (TLD) Badges in the Building (Lindsay Light I Site)	2
2	09/00/93	U.S. EPA	File	TLD Data, ATSDR Recommendations and Gamma Survey Maps of Lindsay Light Building for the Lindsay Light I Site	16
3	10/22/93	Traub, J., U.S. EPA	Steele, R., 161 E. Grand Associates	Letter re: TLD Results for the 161 E. Grand Building (Lindsay Light I Site)	9

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
4	06/07/94	Anderson, G., U.S. DOL/ OSHA	Simon, V., U.S. EPA	Letter re: OSHA's May 11, 1994 Inspection at 161 E. Grand Avenue (Lindsay Light I Site)	5
5	07/09/96	Steele, R., 161 E. Grand Associates	Simon, V., U.S. EPA	FAX Transmission re: Final OSHA Ruling and Data for the 106 E. Grand Building	4
6	08/12/96	Charp, P., USDHHS/ USPHS/ ATSDR	Anderson, G., U.S. DOL/ OSHA	Letter re: ATSDR's Concern for Radiological Contamination at 161 E. Grand Avenue (Lindsay Light I Site)	3
7	08/20/96	Charp, P., USDHHS/ USPHS/ ATSDR	Anderson, G., U.S. DOL/ OSHA	Letter re: Corrections to ATSDR's August 12, 1996 Letter Concerning Radiological Contamination at 161 E. Grand Avenue (Light I Site)	1
8	08/22/97	U.S. EPA/ OERR	U.S. EPA	Memorandum: Establishment of Cleanup Levels for CERCLA Sites with Radioactive Contamination (OSWER Directive 9200.4-18)	20
9	02/12/98	U.S. EPA/ OERR	U.S. EPA	Memorandum: Use of Soil Cleanup Criteria in 40 CFR Part 192 as Remediation Goals for CERCLA Sites (Directive 9200.4-25)	6
10	09/27/99	City of Chicago	Obligors	Right of Way Agreement for the Rights of Way Adjacent to 316 E. Illinois Street Between the City of Chicago, River East and Kerr-McGee Chemical	10
11	10/20/99	Prasad, N., City of Chicago/ Department of Environment	Iacullo, C., City of Chicago/ Department of Transportation	Memorandum re: Right of Way Agreement for the Rights of Way Adjacent to 316 E. Illinois Street	1
12	01/00/00	Metro Commercial Real Estate/ R.M. Chin & Associates		Development Brochure for the Grand Pier Center	22

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
13	01/21/00	Osakada, S., City of Chicago/ Department of Sewers	Rhymes, B., City of Chicago/ Department of Sewers	Memorandum re: Illinois Street Sewer from Columbus Drive to McClurg Court	1
14	01/24/00	City of Chicago/ Department of Sewers	File	Permit Application for Work to be Performed on the Main Sewer at Illinois Street from Columbus Drive to McClurg Court	1
15	02/23/00	Simon, V., U.S. EPA	Chin, R., R.M. Chin & Associates	Letter re: Lindsay Light II Site and Grand Pier Development w/Attached Consent for Access to Property Form	5
16	02/28/00	Chin, R., R.M. Chin & Associates	U.S. EPA	Signed Consent for Access to Property Form for the 2XX Block of Illinois Street	1
17	03/02/00	U.S. EPA	File	Table: Grand Pier Center Off Site Disposal (Semi Loads Hauled Off Site) for the Period January 14 - February 29, 2000	1
18	03/08/00	Micke, F., U.S. EPA	Witte, M., R.M. Chin & Associates	Letter re: Work to be Conducted Pursuant to the June 6, 1996 Unilateral Administrative Order at the Lindsay Light II (RV3 North Columbus Drive) Site	3
19	03/21/00	U.S. EPA	File	Tables: Comparison of Sample Results Related to the North Columbus Drive Site	6
20	03/22/00	Rissman, M., Mayer, Brown & Platt	Regel, D., U.S. EPA	Letter re: Grand Pier's Response to U.S. EPA's March 17, 2000 Notice Letter for the Lindsay Light II (RV3 North Columbus Drive) Site	2
21	03/17/00	Karl, R., U.S. EPA	Chin, R., Grand Pier Center	Letter re: General Notice of Potential Liability for the Lindsay Light II (RV3 North Columbus Drive) Site	5

<u>NO.</u>	<u>DATE</u>	<u>AUTHOR</u>	<u>RECIPIENT</u>	<u>TITLE/DESCRIPTION</u>	<u>PAGES</u>
22	03/23/00	Chin, R., R.M. Chin & Associates	U.S. EPA	Signed Consent for Access to Property Form for 200 East Illinois Street	1
23	00/00/00	Simon, V. & F. Micke; U.S. EPA	Muno, W., U.S. EPA	Action Memorandum: Determination of Threat to Public Health or the Environment at the Lindsay Light II (RV3 North Columbus Drive) Site (PENDING)	